THE

AMERICAN JOURNAL

OF THE MEDICAL SCIENCES

FOR APRIL 1859.

CONTRIBUTORS TO THIS VOLUME.

D. HAYES AGNEW, M. D., *one of the Surgeons to the Philadelphia Hospital, Blockley.*

WALTER F. ATLEE, M. D., *of Philadelphia.*

JOHN H. BRINTON, M. D., *of Philadelphia.*

WM. P. BUEL, M. D., *Surgeon to the Pacific Mail Co.*

ALONZO CHAPIN, M. D., *Member of the Massachusetts Medical Society.*

D. FRANCIS CONDIE, M. D., *of Philadelphia.*

J. M. CORSE, M. D., *of Philadelphia.*

J. DA COSTA, M. D., *Lecturer on the Practice of Medicine at the Philada. Med. Assoc.*

JOHN C. DALTON, JR., M. D., *Professor of Physiology and Microscopy in the College of Physicians and Surgeons, New York.*

B. DARRACH, M. D., *Resident Physician in the New York Hospital.*

JAMES DARRACH, M. D., *of Philadelphia.*

PLINY EARLE, M. D., *of Leicester, Mass.*

ANDREW FLEMING, M. D., *of Pittsburg, Penn.*

DAVID GILBERT, M. D., *Prof. of Midwifery in Pennsylvania Medical College.*

WM. H. GOBRECHT, M. D., *Prof. of Anatomy in the Philada. College of Medicine.*

JOHN H. GRISCOM, M. D., *one of the Physicians to the New York Hospital.*

W. A. HAMMOND, M. D., *Surgeon U. S. A.*

EDWARD HARTSHORNE, M. D., *one of the Surgeons to Wills Hospital.*

ISAAC HAYS, M. D., *of Philadelphia.*

W. HOOKER, M. D., *Prof. of Theory and Pract. of Med. in Yale Med. Institution.*

G. R. B. HORNER, M. D., *Surgeon U. S. N.*

W. HUNT, M. D., *one of the Surgeons of Wills Hospital.*

A. REEVES JACKSON, M. D., *of Stroudsburg, Monroe Co., Pa.*

EDWARD JARVIS, M. D., *of Dorchester, Mass.*

WILSON JEWELL, M. D., *of Philadelphia.*

R. A. KINLOCK, M. D., *Surgeon of the Roper Hospital, Charleston, S. C.*

W. S. KING, M. D., *Surg. U. S. A.*

FREDERIC D. LENTE, M. D., *Surgeon to the West Point Foundry.*

JAMES J. LEVICK, M. D., *one of the Physicians to the Pennsylvania Hospital.*

JOHN A. LOCKWOOD, M. D., *Surgeon U. S. N.*

HENRY MILLER, M. D., *President of the Coll. of Phys. and Surgs., Louisville, Ky.*

S. W. MITCHELL, M. D., *Lecturer on Physiology in the Philada. Med. Assoc.*

JOHN H. PACKARD, M. D., *of Philadelphia.*

A. SNOWDEN PIGGOTT, M. D., *Prof. of Anat. and Phys. in Baltimore College of Dental Surgery.*

H. D. SCHMIDT, M. D., *of Philadelphia.*

HORATIO R. STORER, M. D., *of Boston.*

J. D. TRASK, M. D., *of White Plains, New York.*

S. WHITEHORN, M. D., *of Manhattan, K. T.*

WM. WOOD, M. D., *of East Windsor Hill, Conn.*

J. J. WOODWARD, M. D., *of Philadelphia.*

CONTENTS

OF THE

AMERICAN JOURNAL

OF THE

MEDICAL SCIENCES.

NO. LXXIV. NEW SERIES.

APRIL, 1859.

ORIGINAL COMMUNICATIONS.

MEMOIRS AND CASES.

ART. PAGE

I. Contributions to the Literature of Carcinoma. I. On Transition Forms between Cancer and Innocent Growths. II. Anatomy of a Case of Retrograde Cancer. By J. J. Woodward, M. D., of Philadelphia. . . 297

II. Case of Carbuncular Inflammation of the Lip; with some remarks on this anomalous form of inflammation. By Frederic D. Lente, M. D., Surgeon to "West Point Foundry." 308

III. Cases Illustrative of Criminal Abortion. By Horatio R. Storer, M. D., of Boston. (Read before the Boston Society for Medical Observation, Feb. 7, 1859.) 314

IV. Two cases of Encysted Tumour of the Ovary successfully treated by excision, and an attempt to justify the operation of Ovariotomy under certain circumstances. Read before the College of Physicians and Surgeons, of Louisville. By Henry Miller, M. D., President of the College. 318

V. Notes upon the Effect of Alcohol, Glycerine, Water, Gum, Ammonia, and the Vacuum upon the Exposed Hearts of Frogs, Snapping-Turtles, and Sturgeons. By S. W. Mitchell, M. D., Lecturer on Physiology in the Philadelphia Medical Association. (Read before the Academy of Natural Sciences, Biological Department, December 20, 1858. Recommended for publication Feb. 22, 1859.) 343

VI. Observations on the Colourless Blood-corpuscle. By William A. Hammond, M. D., Assistant Surgeon U. S. Army. (Read before the Academy of Natural Sciences of Philadelphia, Biological Department, February 7, 1859. Recommended for publication, Feb. 22, 1859.) . . 348

VII. Cases of Gangrene of the Lungs treated in the New York Hospital from January, 1857, to September, 1858. Reported by B. Darrach, M. D., Resident Physician. 350

VIII. Case of Fracture at Base of Cranium, with discharge from external ear of a portion of the substance of the brain, of watery matter, and of blood in large quantities; Recovery. By John A. Lockwood, M. D., Surgeon U. S. Navy. (Communicated by W. Whelan, M. D., Chief Bureau Med. and Surg. U. S. N.) 354

ART. PAGE

IX. Modified Extension Apparatus for Fractures of the Leg. By Alonzo Chapin, M. D., Member of the Massachusetts Medical Society. . . . 355

X. Observations on the Isthmus of Panama, and on the Hospitals of Havana. By G. R. B. Horner, M. D., Surgeon U. S. Naval Hospital, Warrington, Florida. (Communicated by W. Whelan, M. D., Chief Bureau Med. and Surg. U. S. N.) 359

TRANSACTIONS OF SOCIETIES.

XI. Summary of the Transactions of the College of Physicians of Philadelphia. 365
Intermittent Lochia. By Dr. Corse. 365
Large Dose of Opium taken by a Child, without Fatal Consequences. By Dr. Hays. 367
Vesico-vaginal Fistula. By Dr. R. K. Smith. 367
Effect of Respiration on the Position of the Heart. By Dr. Da Costa. 370
Tænia cured with Pumpkin-Seeds. By Dr. Hunt. 374
Imperforate Rectum. By Dr. Corse. 375
Hemorrhage from the Pharynx, resulting from the partial swallowing of a piece of cartilage. By Dr. Packard. 377
Improved Spirometer. By Dr. S. W. Mitchell. 378
Report on Meteorology and Epidemics. By Dr. Wilson Jewell. . 379
Adhesive Plaster in maintaining Counter-extension in the Treatment of Oblique Fractures of the Lower Extremity. By Dr. Gilbert. . 410

REVIEWS.

XII. The Transactions of the American Medical Association. Instituted 1847. Vol. XI. Philadelphia, 1858. 8vo. pp. 1027. 425

XIII. A Treatise on Human Physiology, designed for the use of Students and Practitioners of Medicine. By John C. Dalton, Jr., M. D., Professor of Physiology and Microscopic Anatomy in the College of Physicians and Surgeons, New York, &c. &c. Blanchard & Lea: Philadelphia, 1859. 8vo. pp. 608. 446

XIV. Report on the Vital Statistics of the United States, made to the Mutual Insurance Company of New York. By James Wynne, M. D., &c. &c. &c. New York: H. Bailliere, 1857. 4to. pp. 214. 458

XV. A Treatise on the Pathology of the Urine, including a Complete Guide to its Analysis. By J. L. W. Thudichum, M. D., with seven plates. London, John Churchill, 1858: pp. 429. 487

BIBLIOGRAPHICAL NOTICES.

XVI. Reports of American Institutions for the Insane.
1. Of the New Hampshire Asylum, for the fiscal year 1857–'58.
2. Of the Massachusetts State Hospital, Taunton, for the fiscal years 1856 and 1857.
3. Of the Retreat, at Hartford, Conn., for the fiscal year 1857–'58.
4. Of the Bloomingdale Asylum, for the year 1857.
5. Of the King's County, N. Y., Asylum, for the fiscal year 1857–'58.
6. Of the Western Pennsylvania Hospital, for the year 1857.
7. Of the Maryland Hospital, for the year 1857.
8. Of the U. S. Government Hospital, for the fiscal year 1857–'58.
9. Of the Indiana State Hospital, for 1857. 493

ART. PAGE

XVII. Brief Expositions of Rational Medicine, to which is prefixed The Paradise of Doctors, a Fable. By Jacob Bigelow, M. D., late President of the Massachusetts Medical Society, Physician of the Massachusetts General Hospital, &c. Boston: Phillips, Sampson & Co., 1858. 12mo. pp. 70. 502

XVIII. Practical Dissections. By Richard M. Hodges, M. D. Demonstrator of Anatomy in the Medical Department of Harvard University. 1 vol. 12mo. pp. 254. John Bartlett: Cambridge, 1858. . . . 506

XIX. Guy's Hospital Reports. Edited by Samuel Wilks, M. D., and Alfred Poland. Third Series, Vol. IV. London, 1858. 8vo. pp. 371. . . 510

XX. A Treatise on the Human Skeleton—(including the Joints).—By George Murray Humphry, Esq., M. B. Cantab., F. R. C. S., Surgeon to Addenbrooke's Hospital, Lecturer on Surgery and Anatomy in Cambridge University Medical School. 8vo. p. 620: Cambridge, Macmillan & Co., 1858. 525

XXI. The Microscope in its application to Practical Medicine. By Lionel S. Beale, M. B., F. R. S., Professor of Physiology and General and Morbid Anatomy in King's College. 2d edition, 8vo.: London, 1858. . . 528

XXII. Nutrition in Health and Disease. By James Henry Bennet, M. D., &c. London, 1858. 8vo. pp. 210. 530

XXIII. Syllabus of the Course of Lectures on Medical Logic, delivered in Marischal College and University, Aberdeen. By Francis Ogston, M. D., Professor of Logic and Medical Jurisprudence. Edinburgh, 1858. 12mo. pp. 45. 532

XXIV. Demonstrations of Diseases in the Chest, and their Physical Diagnosis. By Horace Dobbell, M. D., Licentiate of the Royal College of Physicians, etc. etc. London: John Churchill, 1858. pp. 165. . 533

XXV. The Hygiène of the Turkish Army. By J. N. Radcliffe, M. R. C. S. Eng., late of the Staff of H. H. Omar Pasha. Reprinted, with additions, from the Sanitary Review. 8vo. pp. 60. London, 1858. . . . 534

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES IN THE MEDICAL SCIENCES.

FOREIGN INTELLIGENCE.

Anatomy and Physiology.

PAGE

1. Physiology of Digestion and Nutrition. By Busch. . . 535
2. On the Influence of Heat and Electricity on the Spinal Cord. By Dr. F. Kunde. . . . 536
3. Sarcina Ventriculi. By Dr. Hermann Itzigsohn. . . . 53

Materia Medica and Pharmacy.

4. Action of Carduus Mariæ, C. Benedictus, and Onopordum Acanthium. By Prof. Clarus. . 537
5. Physiological Properties of Xyloids. By J. Baker Edwards. . 538
6. Method of making the Mercurial Cigarettes. By Dr. Nevins. 539
7. Pagliari's Hæmostatic. . . 540
8. Voltaic Narcotism. By Dr. B. W. Richardson. . . . 540
9. Croton Oil as an Epispastic. By Dr. Von Bastelaer. . . . 540
10. Hæmostatic Properties of the Perchloride of Iron. . . . 540

Medical Pathology and Therapeutics, and Practical Medicine.

11. Hydrochlorate of Ammonia in Neuralgia. By Mr. H. C. Brenchley. 541
12. Administration of Medicines in a State of Vapour. . . . 541
13. Inhalation of Carbonic Acid in Granular Pharyngitis. By Dr. Willemin. 543
14. Instillations of a Tepid and rather Concentrated Solution of Chlorate of Soda into the Trachea of Children Affected with Croup. By M. Barthez. . . 544
15. Chlorine in the Treatment of Diphtheria. 545
16. Treatment of Chronic Alcoholic Intoxication. By Dr. Marcet. . 546
17. Great Pigment Deposit in the Skin without Disease of the Supra-renal Capsules. By Dr. Parkes. 546
18. Complete Disorganization of both Supra-renal Capsules without Discoloration of the Skin. By Mr. Davey. 548
19. Intense Neuralgic Pain in the Head; Sudden Death; Cysts in the Cerebellum. By Dr. James Turnbull. 549
20. Cases of Ulceration and Perforation of the Vermiform Appendix. By Dr. A. Mertens. . 550

Surgical Pathology and Therapeutics, and Operative Surgery.

21. Disarticulation of the Scapula from the Shoulder-joint. By Mr. Jones. 551
22. Statistical Analysis of 186 Lithotomy Operations. . . 552
23. Ecraseur in the Operation for Anal Fistula. By Mr. F. B. Quinlan. 557
24. New Method of curing Hydrocele. By Dr. Simpson. . . 558
25. Cases of Re-fracture of Bone, with Observations. By Mr. F. C. Skey. 558
26. Possibility of always detecting a Fracture a few weeks after its occurrence. By Mr. Charles Hawkins. 560
27. Antiquity of Metal Sutures. By Dr. J. H. Aveling. 560
28. Perchloride of Iron in In-growing Nail. By Dr. Alcantara. . 561
29. Therapeutical Action of the Perchloride of Iron in the Treatment of Acute and Chronic Urethritis. By Dr. Barudel. . . 561
30. Injections in Gonorrhœa. By Prof. Sigmund. . . . 562
31. Suffocation from Foreign Body in Rima Glottidis. By Mr. G. H. Porter. 563
32. Descent of a Testis in a Child, simulating Hernia. By Mr. R. P. Bell. 563
33. Encephaloid Cancer affecting a Testicle which had been retained in the Abdomen. By Dr. G. Johnson. 563

Ophthalmology.

34. Iridesis: or the Formation of Artificial Pupil by tying the Iris. By Mr. Critchett. . . . 564
35. Staphyloma of the Cornea. By Mr. Richardson. . . . 566

Midwifery.

36. Abolition of Craniotomy from Obstetric Practice. By Dr. Tyler Smith. . . . . PAGE 567
37. On the Indications for the Application of the Forceps. By Dr. Spiegelberg. . . . PAGE 569
38. Scarlatina after Parturition. By Dr. McClintock. . . . PAGE 570

Medical Jurisprudence and Toxicology.

39. On Arsenical Paper-Hangings. The mode in which they may produce noxious effects. By Dr. Alfred S. Taylor. . . . PAGE 570
40. Pharmacology and Toxicology of the Ranunculaceæ. By Prof. Clarus. . . . PAGE 572

AMERICAN INTELLIGENCE.

Original Communications.

Case of supposed Poisoning by Strychnia. By W. S. King, M. D. 573
Inhalation of Chloroform in Intermittents. By S. Whitehorn, M. D. 574
Extraordinary Fecundity. By Wm. Wood, M. D. 574

Domestic Summary.

Barton's Operation for Straightening the Knee-Joint by Excision of a wedge-shaped bit of Bone. By Dr. J. Mason Warren. . 574
Diabetes. By Dr. Alonzo Clark. 575
Deformity after Fracture successfully treated. By Dr. Daniel Brainard. 577
Ovariotomy. By Dr. J. W. Hamilton. 577
Ovariotomy. By Dr. Charles A. Pope 578
Extirpation of the Eye. By Dr. C. R. Agnew. 578
Apocynum Cannabinum as an Antiperiodic. By Dr. Peterfield Trent. 578
Chinoidine. By Dr. R. Wysong. . 578
Iodine and Glycerine in Scrofulous Ozæna. By Dr. H. F. Campbell. 578
Urea and Uric Acid in Urinary Secretions in Yellow Fever. By Dr. F. P. Porcher. . . . 578

THE

AMERICAN JOURNAL

OF THE MEDICAL SCIENCES

FOR APRIL 1859.

ART. I.—*Contributions to the Literature of Carcinoma.* I. *On Transition Forms between Cancer and Innocent Growths.* II. *Anatomy of a Case of Retrograde Cancer.* By J. J. WOODWARD, M. D., of Philadelphia.

I. *On Transition Forms between Cancer and Innocent Growths.*—In a paper on the "Anatomical Diagnosis of Cancer," published in the *American Journal of the Medical Sciences* for January, 1859, in speaking of the distinctions between cancer and innocent connective tissue formations, I made use of the following language: "At the same time, I am disposed to admit the existence of transition forms, of which, standing as they do upon the boundary-line, no dogmatic opinion can be given." Since the publication of that paper, I have had, through the kindness of Professor Henry H. Smith, an opportunity of studying the minute anatomy of a tumour removed by him at the surgical clinic of the University of Pennsylvania. This tumour appeared to me, after a careful investigation, to deserve a place in the category of transition forms. Its study has been suggestive of a few thoughts, which will form the basis of the present article.

It will be remembered that the fundamental doctrine underlying the paper to which I have just referred was an utter rejection of the motion that cancer is a *heterologous* growth, in any proper sense of the word. On the contrary, the opinion was expressed, that, however obscured by imperfect development, by disordered growth, and by premature involution, it was quite possible to recognize the homology of cancer with ordinary developmental connective tissue, such as can be observed in granulations, in organizing lymph, in imperfectly developed fibrous tumours, or in the

normal developing connective tissue of the embryo. If this opinion be correct—if cancer formation be less a special and specific process than a modification of processes which ordinarily are much less terrible in their consequences—it might be anticipated, *a priori*, that instances would constantly occur in which, though the processes were disordered *in the cancerous direction*, the modification would not be sufficiently decided to enable us authoritatively to denominate the growth *a cancer*. Accordingly, the doctrine of homology above propounded receives fresh confirmation in the fact that the whole group of semi-malignant tumours, as they have with *some* propriety been called, are readily recognized by their minute anatomy to be in fact *new formations of connective tissue*.[1] Under this category must, indeed, be placed the *recurring fibroid* and *malignant fibroid* tumours of Paget, the *fibro-nucleated* tumour of Bennet, such cases as those described by Laurence (*Surgical Diagnosis of Cancer*, 2d edit.) as *malignant fibro-plastic* tumours, with lupus, keloid, and some others of the semi-malignant affections.

Viewed from this stand-point, every case belonging properly to the category of transition forms assumes a high degree of interest, and deserves the special study of the earnest pathologist. Above all, investigation should be directed to determine how far the deviation of the growth in one direction or another from the healthy, unmodified plan of connective tissue development is associated with its approximation to cancer in clinical history. Our present knowledge of this group of growths is so limited that we are not now in possession of facts which will justify us to attempt an answer to such a question, and, with some few exceptions, the histories of those cases of this kind which have been put upon record are not sufficiently minute in their account of the *anatomy* of the new formation to enable us to make use of them in this connection.

If cancer be an imperfectly developed new formation of connective tissue, disordered in its evolution and involution, as Wedl has taught, and as my own studies incline me to believe, and if the essence of the modification which occurs is to be looked for (see *Am. Journ., loc. cit.*) in the arrested development of many of the elementary forms, in their misshapen distension, and their premature fatty degeneration, it follows that in the study of transition forms special attention is to be devoted to these three categories, with the intention of observing how far the degree of anatomical disturbance corresponds to the peculiar clinical history of any given case.

In a word, the ultimate result of such investigations will be to decide whether innocence or malignancy are accidents which may occur in connection with any growth, so that *no* anatomical structure will insure that the

[1] In reply to several queries, it may be stated that I do not use the words "connective tissue" synonymously with white fibrous tissue, but apply them to *that mixture of white fibrous with yellow elastic tissue* which forms the bond of connection between the several tissues and organs of the body.

case will or will not pursue a cancerous history, or whether, on the other hand, each special peculiarity of history impresses upon the local formation a modified anatomy.

With these introductory remarks I proceed to the consideration of the case I have mentioned.

CASE. *Tumour of the left Breast in a Negro Girl* 15 *years old. History.*—The history of this patient, prior to the operation, was as follows: About a year before, while reaching over an ash-box, the pressure made upon one side of the box caused the opposite corner to fly up, giving her a violent blow upon the left breast. This was followed by a moderate degree of tenderness, swelling, and heat in the part. No treatment was employed, and the symptoms gradually subsided. After the swelling had quite left the breast, however, the patient noticed a small hard lump in the gland, which, though it made no prominence externally, could be distinctly recognized by the touch. The lump gradually increased in size until the time of the operation.

At that period the patient presented the following conditions: Her general health was good, she was plump, but not over fleshy, and menstruated regularly. The left breast formed a pendulous tumour, which was not adherent to the deeper parts, though closely attached to the skin. It was about twice the size of the opposite breast, was hard, smooth, very heavy, and evidently involved the whole mammary gland. There was no retraction of the nipple, which, however, was flattened down to the level of the areola.

The growth was the seat of uneasy sensations, compared by the patient to the pricking of pins, but there had never been severe pain in it at any time. At each menstrual period it enlarged, and subsided after the flow had ceased. The lymphatic glands of the neck and axilla were not affected.

As the tumour was rapidly increasing in size, Professor Smith determined to remove it, and it was accordingly amputated by him, February 2, 1859, at the surgical clinic of the University of Pennsylvania. The patient rapidly recovered from the effects of the operation, and was discharged February 14, the wound being then almost completely cicatrized. No tumours have occurred at any time, so far as known, in members of this family, the father, mother, and other relatives being healthy.

Remarks upon the History of this Case.—From the age of the patient, taken in connection with the seat of the growth, the probabilities *against* the cancerous character of the growth are very strong. Mr. Paget, whose ample opportunities entitle him to respect, says, in his work on surgical pathology (p. 512, Am. edit.), that scirrhous cancer of the breast "is extremely rare at any age under 25." While as to medullary cancer he remarks (p. 546): "The *breast* is among the parts which are most rarely the seats of medullary cancer."

Mr. Laurence, in the second edition of his work on the *Diagnosis of Surgical Cancer*, makes use of the following language; the Italics are his

own (Laurence, *loc. cit.*, p. 51): "Supposing we are told that a female has a *tumour in the breast*, and nothing more: from this we can infer nothing. Supposing, again, we are told a female with a tumour *somewhere* is aged fourteen: from this we can infer nothing. But let us be told that that 'somewhere' is in the *breast*, and we at once, *cæteris paribus*, derive a most important conclusion, viz., that the chances of the tumour being of a cancerous nature are infinitely small."

But although the *probabilities* are therefore against the cancerous nature of the growth, the *possibility* of this event cannot be overlooked. It must also be conceded that the uniform shape of the growth, the absence of pain, and the fact that it was not at all adherent to the pectoral muscle, although it had attained such marked size, are all against the idea of its cancerous nature. The only points suggestive of cancer, from the history and external characters of the growth, were its rapid increase in size, its great weight, and its extreme hardness.

Anatomy of the Growth.—The morbid mass, as handed to me, consisted of an elliptical portion of skin in the centre of which was the nipple, of the subcutaneous fat in which the gland was imbedded, and of the mammary gland. Each of these parts presented points of interest, which may be separately noted.

The *skin*, in other respects normal, was unusually adherent to the subcutaneous layer of adipose tissue. The nipple was flattened, and the milk-ducts passing from the nipple to the gland almost entirely obliterated.

The subcutaneous adipose layer was unusually thick for a virgin breast, a thickening not due to an increase of the proper adipose tissue, but to an excess of the connective tissue by which the groups of adipose cells are held together. To the unaided eye the adipose layer, therefore, presented an unusual appearance, being preternaturally firm, and instead of the ordinary yellow lobulated aspect of this structure, exhibiting a dense, pinkish-cream coloured texture. Thin sections, cut with the Valentin's knife, exhibited the following conditions: The groups of adipose cells were quite normal, and lay as usual in the areolæ of a framework of connective tissue. This connective tissue, however, was preternaturally abundant and for the most part fully developed, though some few spindle-shaped nucleated cells, evidently on the road to fibre production (embryonic connective tissue elements), were observed. Especially here would I remark upon the predominance of the well-developed *bundles* of white fibrous tissue, over the yellow elastic fibres on the one hand, and the spindle-shaped cells on the other. The doctrinal suggestions of this observation will hereafter be commented upon.

The mammary gland, however, is, in this case, the point of highest interest. Nearly twice its natural size, and of preternatural density and weight, it was yet nevertheless readily isolable both from the pectoral muscle below and from the superficial adipose tissue above and laterally. It was especially to be observed that whatever the pathological lesion might

be, *it affected the whole gland uniformly.* Its cut surface was homogeneous, and may be described as being less pink and more translucent than the normal gland tissue. The gland was succulent with a dense, transparent, albuminous fluid, which readily exuded on pressure; and when the cut surface was scraped with a knife, this fluid, rendered more or less turbid by the presence of blood-globules and of the anatomical elements of the growth, adhered to the blade.

The turbid bloody fluid thus obtained in no wise resembled, to the naked eye, the so-called cancer juice. The microscope revealed in it (besides blood-corpuscles) the following anatomical elements :—

(*a.*) Innumerable clear, oval, or rounded-oblong nuclei. These on the average were between $\frac{1}{2000}$ and $\frac{1}{3000}$ of an inch in their long diameter. Their contents were transparent and non-granular, and each contained one, or more rarely two, and in some instances even three, small, distinct, shining, spherical nucleoli. These nuclei only appeared as above described when viewed in the juice obtained by scraping, without reagents. The addition of water rendered them slightly granular, and acetic acid made their contours more distinct, at the same time causing them to become so granular as to obscure the nucleoli. After the most severe and impartial study, I am obliged to state that these bodies presented no points by which they could be distinguished from the nuclei of healthy developing connective tissue cells (such for example as those observable in the skin of an embryo of 4 months), except the fact that they were not contained in cells.

(*b.*) Accordingly, I was not surprised to observe also elongated, spindle-shaped cells, isomorphous with those of healthy, developing, connective tissue wherever found. These, however, were comparatively few in number; their nuclei were in all respects identical with those above described.

(*c.*) A few pale, oval cells, extremely delicate, with transparent contents, were also observed.

(*d.*) A few granules, and fat-globules (Aschersonian vesicles), were also observed, but they were not more abundant than in any normal tissue.

Numerous thin sections were cut with the Valentin's knife from various parts of the growth. These everywhere revealed essentially the following conditions :—

Groups of the nuclei above described, and occasionally groups of the cells described at (*c*), lay in the meshes of a stroma of well-developed connective tissue. This stroma was composed of exceedingly handsome, well-developed bundles of white fibrous tissue, with which but a moderate quantity of yellow elastic tissue was mixed. I should say, speaking approximatively, that the absolute quantity of well-developed, normal, white fibrous tissue was between twice and thrice that in a normal gland. The nuclei often lay in little groups of two or three, in the angles of the fibres, and sometimes in larger masses which could in nowise be interpreted as representing the gland-vesicles or the milk-ducts, while the cells never

lying in spaces so shaped that they might not represent modifications of these normal textures, were sometimes also contained in cavities the shape and relations of which imperatively required them to be regarded as the terminal cæca of the lactiferous tubes.

The thin sections were beautifully transparent, and nowhere presented any evidences of fatty degeneration.

Remarks upon the Anatomy of this Growth.—The above details present the prominent points of the anatomy of this tumour. I have presented them nakedly that others may use them as they please, and may separate at a glance the data observed, from the deductions based upon them. From these data, however, the following remarks would appear legitimately to spring:—

1. With regard to the excessive quantity of well-developed white fibrous tissue observable both in this mammary gland and in the subcutaneous adipose tissue removed with it, it is especially to be observed that it is not only wholly disproportioned in quantity, as compared with a normal gland, but it is also excessive as compared with the quantity of yellow elastic tissue found. And here also the extremely small number of healthy spindle-shaped cells (young connective tissue elements) observed both in the superficial adipose tissue, and in the gland itself, becomes significant.

Before, however, proceeding in the attempt to interpret these phenomena, it will be necessary to make a remark on the normal process of growth in the connective tissue of the economy.

Up to a certain period in the development of the embryo, the increase in quantity of the connective tissue elements probably depends almost exclusively on the development of new cells, and their gradual transformation into white fibrous bundles, and yellow elastic fibres. An increase due to the same conditions probably continues to birth, and also, but with gradual diminution in amount, until a period in childhood which has not been definitely determined. (See Kölliker, Am. ed., p. 135.) But the increase is also due, from an early period in embryonic life, to an actual *growth* in length and thickness of the individual white fibrous bundles, and yellow elastic fibres, which become simultaneously both longer and thicker. In the case of the white fibrous bundles the number of fibrilli is apparently increased as the bundle increases in thickness, an increase due to the direct appropriation by the growing bundle of the requisite material from that nutritive plasma, in which, during healthy life all the tissues are bathed. To this process is due all the increase of the connective tissue of the economy which occurs from the cessation of the development of fibre-cells in childhood to fully developed adult life.

It must also be admitted that this growth in the size of the individual elements may go on in any part chiefly in the white fibrous bundles, or, on the other hand, chiefly in the yellow elastic fibres, otherwise how shall we account for the fact that in some parts (*e. g.*, the ligamentum nuchæ) the

elastic fibres are not only more numerous, which can be accounted for by supposing a greater proportional number of formative cells, but also the individual fibres of much greater diameter than those of some other parts of the body.

The above remarks will at once make intelligible what many pathological observations have rendered probable to me, that there are two kinds of *pathological increase in the quantity of connective tissue in any part.* One, which is best described as *a new formation of connective tissue,* which imitates most closely the embryonic process; cells arising in obedience to the law of free cell-development, which are transformed, some into white fibrous bundles, some into yellow elastic fibres. This is the process which goes on in the formation of cicatrices, and in the development of inflammatory exudations generally, as well as in many new formations the initial step of which cannot be positively affirmed to be circulatory disturbance. The second process will be best described as *true hypertrophy* of the connective tissue of a part, and especially of its white fibrous element. As the former process repeats essentially the normal *embryonic development* of connective tissue, so this repeats essentially the ordinary process of *growth* which has been shown to obtain to a great extent in infancy, and almost exclusively in the increase of this tissue during the time of transition between childhood and adult life. In *true hypertrophy,* in the sense in which I here use the term, no embryonic elements are formed, the bundles grow in thickness, and perhaps also in length, by the direct assimilation to themselves of material from the blood.

At the same time, however, that I discriminate between these two separate processes, I am free to admit that in very many instances they occur simultaneously, and that there is at once a *true hypertrophy* and a *new formation* of connective tissue. This appears to have been the case in the tumour under consideration. Without wishing to be dogmatic on the point, the absence of transition forms between the spindle-shaped cells, and the firm, old, fully-developed bundles, inclines me to believe that the mass of increase in the connective tissue both of the gland and the fat about it is due to such a growth in the normal white fibrous bundles of the part as would come under the head of what I have defined as true hypertrophy. At the same time, with the hypertrophy, the existence of the embryonic elements demonstrates a certain amount of new formation.

2. The consideration of the *free nuclei* above described is not without its difficulties, but the fact that they are isomorphous with the nuclei of the spindle-shaped cells, also observed, would seem to point out a genetic relation between the two. I regard them as the nuclei of formative connective tissue cells, the development of which has not yet proceeded so far as to the formation of a cell-wall.

3. More difficult is the interpretation of the cells described above at (*c*). Upon the whole, I regard them as probably the epithelial cells of the smaller milk-ducts, and of their terminal follicles.

It would appear, then, from the considerations adduced, that at least two distinct and simultaneous processes existed in the breast under study. 1. True hypertrophy of the connective tissue of the parts in the manner above laid down. 2. A new formation of connective tissue, which was represented in the case of the superficial adipose layer by a few spindle-shaped cells, in the case of the gland by similar cells and the abundant formation of nuclei. This point in the investigation attained, the question at once arises, Is this an *innocent* or *malignant* new formation of connective tissue? Have we here any evidences that the new formation is not pursuing the usual history of connective tissue development? And if so, is the disorder and distortion of the process such as to justify the designation *cancerous?*

Our attempt to answer this question must be based exclusively upon the anatomical data afforded by the study of the new-formed elements. The coexistence of what I have called *true hypertrophy* of the connective tissue involved, however interesting it may be in a general point of view, is of no value in diagnosis. Such a hypertrophy exists not only in benignant conditions, *but also in cancer.* The careful study of a series of hard cancers of the breast will convince any unprejudiced observer of this fact.

In the study of the new-formed elements, then, confining ourselves to them alone, we cannot fail to note the great numerical predominance of nuclei over more highly developed forms; and, when the age of the disease is taken into consideration, it will hardly be disputed that we are to regard their development as preternaturally retarded. If we compare the innumerable free nuclei with the few spindle-shaped cells, we recognize, to a certain extent at least, the same inequality in the degree of development of the several elements which is to be observed in cancer. But while this is admitted, it must also be confessed that we fail to recognize the misshapen distension and the fatty degeneration of cancerous elements.

Our position, then, in regard to this breast, may be thus stated: the cancerous modification of pathological connective tissue growths lies essentially in three categories—the disorder in the degree of development, the misshapen distension, and the fatty degeneration of the elements. In the growth in question the disordered development occurs, but there is no misshapen distension, no fatty degeneration. Can we, in the absence of the latter two conditions, affirm the growth to be cancer? In the present state of my knowledge on this subject, I would answer, certainly not. Yet, as the disordered development is a deviation in the cancerous direction, I cannot positively pronounce the growth to be innocent; for the possibility must not be overlooked, that, if extirpation had not interfered with the progress of the affection, distension and degeneration of the elements might have ultimately occurred.

I therefore place the case upon record as belonging to the category of transition forms, and shall watch with interest its clinical history.

II. *Anatomy of a Case of Retrograde Cancer.*—The purpose of this article is briefly to record certain anatomical peculiarities in a scirrhous tumour of the breast, which was removed at the surgical clinic of the University of Pennsylvania, and which I was permitted to study, through the politeness of Professor Henry H. Smith. To some it may appear a useless task to add to the details we already possess connected with the minute anatomy of malignant tumours; but, properly regarded, each additional fact is a step, not towards complexity, but towards simplicity, and the scientifically directed attempt to account for the protean forms which new formations assume must ultimately lead to the determination of those guiding laws which lie at the bottom of them all.

History of the Case.—An old Irish woman, more than sixty years of age, presented a tumour, rather larger than a hen's egg, in the left breast. The tumour was ulcerated at several points, from which florid granulations sprouted. The skin surrounding these points was livid, and firmly adherent to the subjacent growth; the nipple was retracted, but the morbid structures were not adherent to the pectoral muscle, nor was there any enlargement of the cervical or axillary lymphatic glands. This tumour had been growing between six and seven years; it first ulcerated about two years ago. During the whole period of its growth it has been the seat of paroxysms of severe lancinating pains.

The bodily health of the patient is good, but her friends state her to be subject to occasional periods of mental aberration.

The opposite breast is in the usual atrophied condition of the patient's time of life.

The breast was removed at the Clinic of the University of Pennsylvania, Saturday, February 5, 1859.

Remarks upon the History of this Case.—The general appearance and history of this case were probably quite sufficient for a diagnosis without any inquiry into the minute anatomy of the tumour.

Anatomy of the Tumour.—The morbid mass, as it came into my hands for study, consisted of an elliptical piece of skin, in which the nipple occupied one focus of the ellipse, of the whole mammary gland, and of some of the surrounding adipose tissue. The nipple was retracted, the adipose layer *over* the tumour had disappeared, and the diseased gland came into immediate contact with the thin, atrophied, livid skin, to which it was adherent. There were several ulcerated points on the projecting portion of the mass from which scanty vascular granulations protruded.

The tumour being laid open from behind by a longitudinal incision was found to present an irregular central cavity two-thirds filled with a yellowish, friable, solid mass, which was adherent at several points to the walls of the cavity.

All of the cavity not occupied by the central mass was filled with a yellowish creamy fluid in quantity rather more than half a fluidounce, which,

to the naked eye, much resembled pus. The odour of this fluid as well as of the friable mass was exceedingly offensive.

The cavity was bounded by a wall or crust one-half to three-fourths of an inch in diameter, which represented the remainder of the diseased gland, and ran out irregularly into the surrounding textures. Sections of this portion of the growth presented, on the surface, a pinkish cream colour, over which radiated yellow reticulated lines.

Each of the above portions were separately studied.

The purulent looking fluid contained in the central cavity presented the following elements:—

(*a.*) Innumerable granules, the majority of which were Aschersonian vesicles of the most variable sizes.

(*b.*) A few angular and granular *nuclei* which were utterly indistinguishable from those of softened *tubercle.*

(*c.*) Cholesterin plates.

No bodies resembling pus-corpuscles were observed.

The elements of the central friable mass were identical with these, but aggregated together so as to form a tolerably solid substance.

The outer crust or shell yielded on scraping a moderately opaque cream-like "cancer-juice," in which the following elements were observed:—

(*d.*) *Nuclei;* large, clear, oval or rounded oblong, with single, double, or triple, large, shining vesicular nucleoli. These nuclei had transparent or dimly granular contents, and varied in length from $\frac{1}{1200}$ to $\frac{1}{3500}$ of an inch. The great size and irregular shape of many of the nucleoli was noteworthy. The nuclei became more distinct and their contents granular on the addition of water, and yet more so on the addition of acetic acid. Besides the nuclei above described there were also a few similar nuclei in which a certain amount of fatty degeneration had occurred, as evidenced by the presence of numerous Aschersonian vesicles.

(*e.*) *A few spindle-shaped cells,* the ordinary normal young connective tissue elements.

(*f.*) A small number (that is, few as compared with the number of the nuclei) of *distorted* young connective tissue elements, huge misshapen cells of the most varied shape with one, two or more nuclei, identical in appearance with the nuclei above described. These answered well to the characters of the so called "cancer cells."

(*g.*) A few of those aggregated heaps of granules, usually known as compound granular cells.

(*h.*) Innumerable granules, chiefly Aschersonian vesicles.

Numerous thin sections of this part of the morbid mass were cut with the Valentin's knife, and the usual arrangement of similar growths was found to obtain. The elementary forms above described were aggregated together into larger or smaller groups, and lay in the meshes of a connective tissue stroma, which doubtless represented the primitive connective tissue of

the gland, *plus* a certain increase due to true hypertrophy in the sense laid down in the first of these papers (vide *supra*), as well as to new formation.

The numerical relations of the cells to the nuclei, as thus studied, was not so disproportionately small as might have been supposed from the study of the juice; yet a vast predominance in the number of the nuclei was still observable.

Perhaps the most noteworthy fact in such sections, when studied with a high power, was the degree of fatty degeneration, as evidenced by the innumerable Aschersonian vesicles, not only in the cells and nuclei, but also in the fibrous stroma of the growth. In some points, indeed, the degree of fatty metamorphosis was such as to render the preparation too opaque to be satisfactorily studied.

When such sections were studied with lower powers, it was observed that these opaque parts were distributed with a certain degree of order, appearing with a two inch object-glass as a brownish-black (or with reflected light as a yellowish-white) branching network, which was to a certain imperfect degree recognizable to the naked eye. It is, as is well known, to such a branching network that the designation *reticulum* is given; and Johannes Müller, who did not know that this yellow reticulum was only the optical expression of the excessive fatty degeneration of certain parts, made a special variety of cancerous growths, "reticular cancer," grouping under this head all cancers which exhibited a reticulum.

The *granulations* above described, as sprouting from various points of the tumour, presented the following conditions: In the more superficial projections the only elements observed were innumerable nuclei identical with those described above at (*d*). These were piled irregularly together, no definite order being observed.

In the deeper parts, as shown by thin sections, similar nuclei lay in groups in the meshes of a vascular stroma, composed chiefly of ordinary young connective tissue cells.

Remarks upon the Anatomy of this Growth.—This tumour would appear to belong to the category of retrograde cancer. I interpret the purulent fluid occupying the central cavity as *softened cancer*. It is not pus in any proper sense of the word. I regard it as the ultimate result of that destructive fatty degeneration, which, in one degree or another, is characteristic of cancer. The offensive odour of this fluid is simply the expression of the putrefactive processes commenced in a substance whose vitality is lost.

The central friable mass is simply to be regarded as a slough. It exhibits well the condition of a cancer to which certain continental writers have applied the term *necrosis*, a term usually limited in this country and England to gangrene as it occurs in bones.

Some of the earlier writers supposed that the softening and breaking down of a cancerous tumour invariably began in the central portions, as

in this case. The analogy of phlegmons and of softening tubercle was in favour of this idea, which, however, has been disproved by numerous observations which have shown that the softening and sloughing of the cancerous growth may begin in *any part of its substance.*

Various theories have been propounded to account for the tendency of cancerous growths to ulcerate and slough. The idea, often promulgated, that the part of the cancerous mass farthest removed from the vital influence of healthy tissues, generally sloughs, and that on account of its distance from them, is met by the broad fact that whereas some cancerous tumours ulcerate and slough before they have attained the size of a hen's egg, others acquire a prodigious bulk before they undergo this change. For myself the anatomical conditions of this case, and of every other sloughing or ulcerating cancer it has been my fortune to study, compel me to conclude that the ulceration and sloughing of these growths is the inevitable result of an exquisite degree of that fatty degeneration which is characteristic of cancer. The unknown momentum which determines the lesser degree of this process determines also the higher.

The study of this case, moreover, suggests an anatomical reason for the fact that cancerous ulcers do not generally cicatrize. It is simply due to the circumstance (which I have noticed also in several other cancerous sores) that the granulations sprouting up in such a sore, whatever their external aspect, are in fact not ordinary granulations but *cancer substance,* and they therefore pursue the history of cancer, instead of undergoing those transformations which occur in healthy granulations.

At the same time, the fact must not be forgotten that the cancerous ulcer *does sometimes,* though rarely, cicatrize. I have never had the opportunity of observing, and I know of no recorded observations which show, whether in such a case the alteration in the usual history is due to any prior change in the anatomy of the granulations.

ART. II.—*Case of Carbuncular Inflammation of the Lip; with some remarks on this anomalous form of inflammation.* By FREDERIC D. LENTE, M. D., Surgeon to "West Point Foundry."

Feb. 19th, 1858. Lieut. M., U. S. Navy, a stout healthy looking man, about 40, had been rather "under the weather" for two weeks, with gastric derangement, &c. He had left the South a few days ago, just before a sudden cold change in the weather, and, in coming up Chesapeake Bay, exposed himself on deck at night. He was soon after attacked with shiverings, and pains in his muscles and bones, with headache. These symptoms he still complains of. Some days ago, he noticed a small pimple

on the left side of the upper lip, which he subsequently scratched, and thus formed into an open sore. Two days ago, the lip commenced swelling, and became painful; the pain and tumefaction had both increased rapidly, causing now entire loss of sleep. The lip, on the left side, is swollen, hard, livid, and everted to some extent, and just at the junction of the vermilion border with the skin, is a small ulcerated spot. The tongue is coated with a whitish fur, pulse rapid, and rather feeble, breath offensive, bowels costive. Ordered pulv. Seidlitz every four hours, and to apply an emollient poultice to the part.

20*th.* The pain became so severe last night as to render a large anodyne necessary. Has had no sleep. The tumefaction has increased and extended beyond the median line to the right, and also upwards towards the eye. Made a deep incision through the ulcer. No discharge of pus, but the cut tissues could be seen infiltrated with points of thick curdy matter. Bowels have not moved. Ordered ℞.—Hydr. sub. mur. gr. x; pulv. jalapæ gr. xij.—M. Continue the powders.

21*st.* Pain somewhat less severe. Bowels have been moved once; tumefaction full as great, edges of incision gaping widely, and slightly everted. Continue poultice.

22*d.* Last night was summoned, and found the patient suffering excessive pain; tumefaction and constitutional disturbance increasing. The vermilion border, on both sides of the incision, is more swollen and hard; small points of matter can be seen at various points through the livid epithelium. A longitudinal incision through the vermilion border, on either side of the first, was accordingly made, giving vent to a little thick pus; a large anodyne was administered, and the poultice continued.

23*d.* Pain somewhat relieved; slept three or four hours; tumefaction the same; edges of first incision gape more widely, and still everted. Pulse feeble. Directed him to anoint the lip freely with the following ointment, and to keep the same constantly applied on lint covered with oiled silk. ℞.—Pulv. opii ʒj; glycerin ʒiij; ung. hydrarg. ʒj, M., and to take one of the following pills every three hours: ℞.—Pil. hydr., quin. sulphat., ext. conii mac., āā gr. xij; ferri sulph. exsic. gr. vj.—M. Divid. in pil. No. xij. A Seidlitz powder occasionally.

24*th.* Better. The lip is softer, and a little less tumefied; the edges of the first incision have softened and fallen in, and there is some discharge of pus from the wound. The lip is almost free from pain. But the inflammation towards the eye has rather increased; appetite fair, but can only take soft food.

26*th.* Has been gradually improving; the softening going on; matter is oozing through several small points near the edges of the incision. An abscess, which has been forming between the first incision and the eye, has now burst into the former, and discharges a dark, unhealthy pus. The trouble is now evidently over. Convalescence was rapid.

At the time of the occurrence of the above case, it had escaped my recollection that I had ever seen any account of a similar affection. I therefore termed it *carbuncular* inflammation, as conveying a more accurate idea of the peculiar pathological condition of the part than any other; but still it is not altogether a satisfactory term, as there is no sloughing, and it does not convey any idea of the malignancy and fatality which often attend this affection. I find that, for four or five years past, a disease very similar to this, if not absolutely identical, has been noticed by two or three physicians in different parts of this country. In a report of the proceedings of the New York Medical and Surgical Society, published in the January number (1859) of the *New York Journal of Medicine* (p. 18), Dr. John Watson notices a case of this disease under the name of *virulent pustule*, which bears so close a resemblance to the one just described, that I take the liberty of transcribing his brief account.

The patient was an Englishwoman, who had noticed "a small and slightly painful pimple upon the upper lip, which she had pricked with a needle. This seemed to aggravate it, and when the part was somewhat swollen, she had gone to a neighbouring apothecary, who, with a lancet, had scarified the mucous membrane of the lip. When Dr. Watson saw her, there was considerable tumefaction about the part, extending to the angle of the lip, and upwards towards the eye, for two or three inches. The mucous membrane was swollen, corrugated, and nodulated, the pulse 120 to the minute, the tongue coated, and the swollen part quite painful. He now thought of making a free incision into it; but, as it appeared to him that no sufficient indication existed for so doing, he ordered an evaporating lotion for the cheek, and gave internally spirits mindereri, and solution of morphia.

"This treatment was kept up for two days, with the result of producing diaphoresis, and some sleep. At the end of forty-eight hours, during which little change had occurred in the inflamed spot, he found, on everting the lip, points like detached pustules, similar to those showing themselves in anthrax, when about to break. He now made a free incision into the lip, and gave exit to blood and matter. The next day the pulse was higher, but she was evidently better, and, in a week, convalescence was fully established. The incision was undoubtedly of great benefit to her.

"The disease, he remarked, has not as yet been fully and accurately described; resembling anthrax in many respects, and the real pustule maligne in others, it differs in many particulars from both, and should not be confounded with them in description. The disease generally appears about the face near the mouth, and is often fatal, and had been so in three cases which he had seen.

"Dr. Parker agreed with Dr. Watson as to the essential difference between this species of virulent pustule, and the pustule maligne of the French writers. He had lost a case very similar to that mentioned by Dr. Watson."

"Prof. Post regarded the disease as very similar to carbuncle. Prof. Parker remarked that anthrax presupposes always more or less sloughing of the surrounding tissues; this disease is not accompanied by it, and resembles mere furuncle."

"Dr. Van Buren had seen a case in a young married lady, which, commencing in a small pimple on the lower lip, ran a very rapid course, and

destroyed life in forty-eight hours after he saw her. Dr. Buck mentions four cases of this affection, of which three died."

In the 12th vol. of the *New York Journal of Medicine*, 1854, page 368, Prof. Parker has an article on "*A Peculiar Form of Malignant Inflammation of the Lips and Face, resembling Malignant Pustule*," including an account of four cases, three of which proved fatal within a very short time; in the case that recovered, portions of the lip sloughed. Prof. P. remarks that, in all the cases which had fallen under his notice, the disease has been seated on the *lower* lip. "The disease," he goes on to remark, "would seem to be peculiar, having many points of resemblance to other similar affections, but still, not so closely allied to any one as to warrant its classification under the same head." Dr. Parker also notices an article by Dr. Peirson, of Salem, Mass., who reported several cases in the *Boston Med. and Surg. Journ.*, 1852, which he considered malignant pustule. "With but one or two exceptions, the disease appeared in curriers, and hence Dr. Peirson attributes the disease to inoculation by dead animal matter." The disease, as a very general rule, attacked the lips. In vol. 13 *New York Journ. of Med.*, 1854, Dr. Ayers, of East Creek, N. Y., notices two cases of this disease, both occurring on the lower lip. The treatment was incision, tonics, stimulants, and *mercurial*. Both cases recovered, although the symptoms were very alarming.

Two diseases very closely resembling this affection are very prevalent in France, and very fatal, though very rare in this country, Pustule maligne, and charbon malin, and it is probable that all three originate in the same manner. Carbuncular inflammation of the lip seems to bear a closer affinity to the former than the latter. Thus malignant pustule, as described by the authors of the *Compendium de Chirurg. Pratique*, like this disease, marches from without to within, while malignant carbuncle first manifests itself in constitutional disturbance. P. maligne only attacks those parts of the body habitually uncovered, C. malin all parts. P. maligne commences by a small, and apparently unimportant point of redness and swelling; the C. malin by a swelling of considerable size, and less circumscribed. Lastly, the pustule, according to the best French writers, always results from external action, and, often, passing through two or more stages, before any disorder of the general health is observed. But, after all, these two diseases, though differing so widely in many respects, are in their essence identical. This appears to be the conclusion of those writers by whom they have been most closely observed. That is, they both result from an animal poison introduced by some means into the system; in the case of malignant pustule, through the skin; in the case of malignant carbuncle, through the air or alimentary passages.

In the *Compendium de Chirurg. Pratique*, art. "Maladies Charbonneuses," is an account of an epidemic of malignant pustule, occurring in

the department of the Basses-Alpes, which Bayle, who describes it, considers of spontaneous origin, developed without contagion. But it appears that, simultaneously with this epidemic, there was also one among animals in the same localities, by which great numbers were perishing. This, coupled with the fact of the extremely contagious nature of the epizootic, its facility of admission into the human system by so many inlets, might well lead the authors of the compendium to characterize the alleged spontaneity of the epidemic as *une chose très incertaine.*

Considering the fact then established for the present that the charbon malin, or the pustule maligne, always results from an animal poison introduced from without, we inquire, What is the origin of this carbuncular inflammation or virulent pustule, or by whatever name it may be designated? It is certainly very nearly allied to these diseases, not differing more from one of them than they do from each other, although, as we have seen, identical. The individuals attacked are, as a general rule, not in any peculiar pathological condition as to their general health. It would seem then probable that this disease, like pustule maligne, is a local affection, but whether produced by the same or some analogous cause, it is impossible at present to determine; such appears, however, not improbable when we consider the extreme facility with which these diseases are spread by contagion. Thus, Bidault de Villiers states that a number of persons contracted malignant pustule by merely handling the dead body of an over-driven ox (un bœuf surmené). Fournier states that those engaged in washing and carding the wool of infected animals contracted the disease; also in tanning the skins. In Bourgogne, in France, where the disease is unusually prevalent and fatal, the peasantry often line their sabots with sheep-skin, and thus often contract pustules. Nor is it necessary that there should be any abrasion or wound of the cuticle; for it is stated that the shepherds, who carry their sick sheep on their shoulders, have pustules on the back of the neck; and Chaussier reports the case of a shepherd who, having carried the bleeding body of a dead sheep on his shoulders, and the blood having penetrated his clothes and rubbed against his loins, had a pustule maligne at this point. Nor is it necessary even that contact should take place between the diseased body of an animal and the human body; Fournier, Chaussier, and others, relate instances of the production of these pustular and carbuncular diseases through the respiratory and digestive passages.[1] They may also be produced by the bite of an insect. It is related that Maret, a celebrated physician of Dijon, believed that a particular insect had the power of producing pustule without having been previously contaminated by contact with a diseased animal. But he appears to be alone in this belief, and the general opinion seems to be that it always results from an insect "*qui s'est nourri de débris d'animaux, ou qui a sucé les liquides*

[1] Compend. de Chirurg. Pratique, p. 279.

fournis par des plaies charbonneuses." "All species of flies, but especially the carnivorous wasp (guêpe carnassière), are the agents by which the virus is most frequently conveyed." Thomassin has observed that even the bee is capable of conveying the contagious principle. With these facts before us, and calling to mind the numerous instances of the sale of diseased meat which are made public from time to time, and the still more numerous instances which never come to light, and also the many diseased living animals that are constantly to be found in our larger cities, it is not difficult to believe in the contagious nature of this peculiar disease, which is becoming so prevalent of late in this country. The fact that so many partake equally of the diseased meat, while so few contract the disease, does not militate against this supposition; for we well know that, among the great number of dissection-wounds received yearly by the hundreds of medical students, and by physicians engaged in making post-mortem investigations, very few result in serious trouble. It is stated by de Villiers that of two or three hundred who ate of diseased meat, only fifteen were affected with pustule maligne. Many of those affected with true malignant pustule in France were positive that they had neither eaten of diseased meat nor been exposed to contagion. There is but little doubt that Dr. Peirson's cases, referred to in Dr. Parker's article, originated from contagion, as they nearly all occurred among curriers.

The increase of this disease in the northern part of this country, the little attention it has received in the medical periodicals, the great obscurity which envelops its history, the ill success of treatment, and its consequent fatality, we hope will excuse the length of this article, which, although it throws little additional light on the subject, yet may attract the attention of other observers who may have more extended opportunities for its study. A few remarks on the treatment of carbuncular inflammation will conclude this paper.

Lieut. M.'s case differs in two particulars from most of those heretofore published. The severe local symptoms were preceded by marked constitutional disturbance, thus resembling more the development of the charbon malin than the pustule maligne; the treatment, also, which seemed to afford any decided relief was also peculiar—the *mercurial*, externally and internally, in combination with anodyne and tonic. Allusion has already been made in this paper to two severe cases treated successfully by Dr. Ayres by mercurial, combined with tonic and stimulant treatment. He only used the mercurial internally. We have only met with these three instances in which any form of mercurial has been tried. Deep incisions are dwelt upon by most of those who have reported on the subject as a *sine qua non* in the treatment, and the appearance of the local affection is certainly suggestive of this procedure; but, in very few instances, have they given that prompt and decided relief which they always do in other similar diseases, with one exception—malignant pustule; in this disease, French

surgeons have found *deep* incisions very dangerous, and many have discarded them entirely. May they not also be prejudicial in this disease? We are certainly in need of some more prompt and certain remedy than this has heretofore proved to be. The actual cautery has been much employed by some French surgeons of eminence, and even in some apparently desperate cases has proved successful when used freely and fearlessly. It would be a very serious case that would warrant the application of this agent to the seat of this peculiar inflammation, which is almost invariably on the lips; but when the mortality is from fifty to seventy-five per cent., its application is certainly not unwarrantable, whatever the resulting deformity. In all cases, whatever other treatment may be employed, tonics, nourishment, and stimulants, according to the urgency of the typhoid symptoms, which are nearly always present, will be imperatively demanded.

COLD SPRING, February 26, 1859.

ART. III.—*Cases Illustrative of Criminal Abortion.* By HORATIO R. STORER, M. D., of Boston. (Read before the Boston Society for Medical Observation, Feb. 7, 1859.)

CASE I. Mrs. H—, of Roxbury, applied to me for treatment, on the 14th of October last. Patient, an American by birth, though the wife of a German, is a well-formed, healthy looking woman, some twenty years of age, and was then five and a half months gone with her first child. Her general health had been good, and till the present she had never suffered from any form of neuralgic pain.

She reported excessive toothache, of nearly two months' standing; that it commenced on the left of the lower maxilla, but then affected both sides of both jaws; that during the whole period she had been under the charge of a physician, and had been thoroughly and actively treated, by anodynes, local and general, by antispasmodics, purgatives, fomentations, counter-irritants; that a tooth, apparently the only carious one she had, had been extracted ten days previously, and that it had been proposed to remove others, to which, however, she would not consent—all without the slightest relief.

She alleged, and showed, loss of sleep and of appetite, great general prostration, excessive despondency of mind. After the extraction of the tooth, abortion had threatened—and she now begged that it might be brought on; declaring, if refused, that she would induce it upon herself, rather than endure further pain.

She was ordered a fragment of pellitory root, pyrethrum, as a direct

gingival stimulant, though horseradish would probably have answered the purpose, and on the second day presented herself cured. There has been no return of the malady, save a slight attack on January 19th, which was readily relieved by the same treatment. Patient was confined on February 3d; and is doing well.

I report this case for two reasons. In the first place, as an instance of the frequent success of simple and apparently trivial remedies after severe ones have failed. The affection seems to have been entirely neuralgic in its character, reflex, the result of the uterine irritation. All other causes mentioned by writers as liable to produce it were absent; there was no local inflammation, no general catarrhal affection; the disorder did not commence at, and apparently was in no way dependent upon, the carious tooth, at least it was not relieved by its removal, nor by the local blood-letting then occasioned.

I am aware that sialagogues, according to Gardien, and he is apparently indorsed by Churchill, are supposed indicated only in those instances where the toothache is in consequence of a general catarrhal affection, which did not here exist; but on the other hand their use would seem, on the simplest theoretical grounds, among the first procedures that would occur to the mind.

The second of the reasons referred to is the following: that I may express my strong disapproval of the practice, still extensively obtaining among physicians and dentists, of subjecting patients to the risk of miscarriage, which must be confessed excessive, by the extraction of teeth during pregnancy. This procedure should in no instance be resorted to till every other measure which affords any prospect of relief has been faithfully employed. In the history reported, it is seen that such was not the case.

Extraction has been recommended by authorities who are respected, by Campbell, Gardien, Capuron, and others, on the supposition that there is a greater likelihood of abortion from the continued pain; but against this argument I place the facts that after resisting many remedies, the pain often disappears spontaneously—as is indeed allowed by one of the writers instanced, Capuron—and that in more plausible measures, tried and untried, readily occurring upon reflection to all who do not blindly follow the books, there is, I think, a greater probability of success. Anæsthesia, local and general, have both been found to avail. I would suggest, as worthy attention, a modification of the process of subcutaneous injection, proposed by Alexander Wood, of Edinburgh, and so successfully employed; merely here introducing the opiate beneath the mucous membrane, which I am not aware to have yet been done.[1] Should this also fail, a direct topical appli-

[1] After this paper was in type, I find, by the Edinburgh Medical Journal for Nov. 1858, p. 424, that the above suggestion has been partially anticipated; a dentist,

cation, either of a local anæsthetic or a gentle stimulant, might be made to the cervix uteri; but as this latter procedure, though at times successful in the obstinate vomiting of pregnancy, cannot be used with too much caution during gestation, it would, therefore, be seldom justifiable; and only in the cases where the extraction of teeth in pregnant women can ever be defended, those, namely, where abortion is actually threatening and apparently at hand.

It might be asked how the case now reported can fairly and with justice be considered as in any way illustrative of the subject of criminal abortion, because, though menaced and solicited, this did not actually take place. It is an acknowledged principle of jurisprudence that a person must be presumed to intend all the natural, probable, and usual consequences of his own act.[1] Whenever, by any operative or other procedure, a physician directly produces abortion, unintentional though this may be, if in the absence of any precaution that might have been taken, he must be considered, to the extent evidenced by the history of the patient, responsible therefor; and the class of cases to which that now reported belongs, is accordingly open to as legitimate a question of obstetric morality and of criminal responsibility as that other series of late so ably discussed by Dr. Churchill, of Dublin.[2]

CASE II. I was called to attend Mrs. S—, of Plympton Court, on the afternoon of January 2d, 1859, and found her flowing profusely, this having continued for many hours; the attack at first being considered menorrhagic, as she was still suckling, till an abundant escape of coagula had rendered probable its true character.

Upon examination, the uterus proved somewhat enlarged and slightly retroverted, the os, with difficulty reached, sufficiently patulous to admit the tip of a single finger, but its outline laterally and symmetrically fissured, so that the cervix presented to the touch an apparently deep and incised transverse wound completely through its substance, with irregular edges and indentations simulating artificial punctures. These irregularities and depressions were not like those presented by malignant disease; there was no fetor or other usual or plausible symptom of such, save the hemorrhage. Within the os a mass was felt presenting, which, from the absence of other signs of polypus, the sudden and profuse sanguineous discharge, and the faint uterine contractions that from time to time occurred, conjoined as these were with a contained body of hardly sufficient size, if a polypus, to have

Dr. Smith, having had recourse to the measure, for the painless extraction of teeth. The experiment does not yet seem to have been tried, however, as here proposed, with a view to prevent that operation.

[1] DAVIS, Crim. Justice, 483.

[2] Dublin Quarterly Journal of Med. Science, August and November, 1858.

itself excited them, I did not hesitate to pronounce a partially detached ovum.

My first impression from the physical examination was of course that the abortion must have been owing to direct instrumental or other violence, which, however, the patient persistingly denied. Upon learning that she was of the Catholic faith, these suspicions were somewhat allayed; for reasons I shall elsewhere fully set forth, and which are borne out by statistics so far as existing, and by general experience.

I was the further convinced of my error upon hearing the past history of the case. The patient, as already remarked, was nursing—sixteen months having elapsed since her last confinement. The catamenia had not returned, and the only possible cause she had had for supposing she might be pregnant, beyond the ordinary exposure of married women, was an apparent slight decrease in the amount of milk secreted; of the existence of this decrease, however, she was by no means certain, and had attributed to it no importance. She had strained herself within a day or two, by reaching to a shelf.

Mrs. S— had been confined four times; in every instance labour being exceedingly tedious, and delivery accomplished by instrumental aid. Though the children were all born living—one, however, the first, dying shortly after birth—their extraction was effected with much difficulty, and the application of considerable force. I could not doubt, therefore, that laceration of the cervix had occurred at one or more of the times referred to, sufficient to account for all the appearances that were now observed; an accident by no means incompatible with the exercise on those occasions of all needful caution and skill, for it is notorious that lesions, to a greater or less extent, of the margin of the os are extremely common, even in natural labours.

In the treatment of the present case there was nothing unusual. It seemed impossible to check the abortive process, and there being little danger from confined internal hemorrhage in early miscarriage, when the uterine cavity is but slightly enlarged or dilatable, the vagina was plugged; strips of cotton being used, inserted separately and tightly packed, like the foil in the process of tooth-filling. Upon their removal, three hours after, the os was found widely patulous, proper forceps were introduced, and an embryo, some six weeks advanced, was removed; upon which the hemorrhage at once entirely ceased. The patient has made a good recovery.

January 28th, four weeks subsequent to the miscarriage, the physical signs presented by the uterus were still persistent, as described above.

Upon reviewing this case, I think it important to dwell upon the diagnostic peculiarities it presents, unadverted to, so far as I am aware, by any obstetric writer. We are all familiar with the various permanently disastrous results at times following instrumental or otherwise difficult labour,

the adhesions, bands, and fistulæ that not unfrequently come under medical observation; but to find such, in the absence of all signs of concomitant or consequent malignant disease, and accompanied by profuse hemorrhage —their edges, the cicatrices themselves, and the depressions between them, obscured and filled by coagula, and at the same time, and in the midst of these physical anomalies, the presentation of an aborting ovum—would raise, I may surely say, in almost every mind the suspicion of foul and criminal interference. Were death to occur under such circumstances, the result at an inquest could hardly be doubted, unless unusual care were observed at the autopsy to remove by ablution all clots obscuring the age of the existing lesions; a precaution that in most instances would hardly be observed, for fear of disturbing any attachments of the ovum—so often in these cases preserved for the cabinet—that might still obtain.

It is my duty to lay the more stress upon this case and its several suggestions, lest at other times, and in another connection,[1] any remarks of my own might seem unjust. But, on the other hand, I am thus strengthened in my belief that many of the medico-legal relations of criminal abortion are as yet uninvestigated or unfound, and that with every step towards their elucidation an advance is made towards the ultimate suppression of the crime.

ART. IV.—*Two cases of Encysted Tumour of the Ovary successfully treated by excision, and an attempt to justify the operation of Ovariotomy under certain circumstances.* Read before the College of Physicians and Surgeons, of Louisville. By HENRY MILLER, M. D., President of the College.

IN the spring of 1848 I performed, for the first time, the operation of ovariotomy on a poor woman, from the State of Indiana. A history of the case, and the favourable issue of the operation undertaken for its relief, were published in the July number of the *Western Journal of Medicine and Surgery*, for the same year. In the fall of 1857, a little upwards of a year ago, I performed the same operation, for the second and only other time, in the case of a woman coming to me from Ohio County, Ky.

I propose now to give some account of my second operation, having purposely deferred doing so until sufficient time should have elapsed to test the validity of its results, and then to present an abstract of the first case and trace the further history of the patient. In this way I hope to construct a platform of personal experience, from which, limited though it be, I may presume to speak with greater confidence of being attentively heard,

[1] Essay on Criminal Abortion. North Amer. Med.-Chir. Review, May, 1858.

when I come to express my views concerning the treatment of advanced cystiform degeneration of the ovary.

CASE II. Mrs. Ashby, æt. 30, came to the city for the purpose of consulting me on account of a large abdominal tumour, which was first noticed by her fifteen months previously, being then a small lump in the right iliac region. Since that time it has grown to such magnitude as to fill and distend the cavity of the abdomen, its superior boundary reaching to the epigastric region. She states that it is painful at times, especially after any considerable exertion, and that it has occasionally been the seat of very acute pain. She had borne but two children, the first being twelve and the second five or six years old. Since the last birth she has not conceived, nor did the menses return until twelve months subsequently to parturition, when they were too frequent as well as profuse for a while, but became scanty and protracted afterwards, as they are at present. Her appetite and digestion are impaired; there is marked emaciation, with pinching of the features and an expression of anxiety and suffering. The pulse is permanently accelerated.

Examination of the Tumour.—On making bare the abdomen, the unequal surface and irregular limits of the tumour are quite obvious. The density of its several portions, as tested by the touch, is various and at its upper part, where it is most yielding, distinct fluctuation is perceivable. Below the umbilicus, fluctuation is very obscure, if it can be detected at all. Examined per vaginam, the uterus appears to be of natural size, but is pushed over towards the left ilium, and on introducing the sound into its cavity, the point of the instrument can be felt through the integuments above the horizontal branch of the left os pubis. The inferior part of the tumour encroaches on the pelvic cavity, and can be easily felt through the walls of the upper portion of the vagina.

Diagnosis.—From the particulars, above recited, it was judged that the patient was the subject of encysted dropsy of the *right* ovary, of the multilocular kind, and furthermore that she could not much longer survive the inroads which it was so evidently making on her constitution. It was, therefore, deemed expedient to propose for her consideration the only remedy which appeared adequate to the crisis, viz., the complete extirpation of the offending growth. The formidable nature of the operation and the risk of its fatal issue were fully explained to the patient and her husband, and they took a week to consider whether it should be accepted or declined. Their decision being thus deliberately in its favour, preparation was made for its performance.

Operation.—On the 30th of September, 1857, the operation was performed at St. Joseph's Infirmary, in the presence and with the kind assistance of Drs. Flint, Bayless, Bell, Rogers, Palmer, and Donne.

The patient being placed upon a table in the usual position, anæsthesia was induced by the administration of chloroform in the hands of Dr. Bell, and the operation commenced by making an incision about two inches in length through the linea alba just below the umbilicus. A quantity of puriform and viscid fluid flowed from the incision, but whether it escaped from the cavity of a cyst, unintentionally opened, or from the cavity of the peritoneum into which it had found its way through an ulcerative perforation of the cystic coats, could not be certainly determined. At all events, a trocar was now thrust into the cyst, exposed by the incision, to evacuate

its contents and diminish the size of the tumour. A part of the fluid flowed into the peritoneal cavity.

Two fingers were next introduced between the surface of the tumour and the peritoneum lining the walls of the abdomen, in order to ascertain whether any adhesions had been formed, and to break them up should any be discovered. But the tumour was found free as far as the fingers could reach, and perfectly movable in the abdominal cavity. The external incision was now extended nearly to the symphysis pubis by the bistoury, guided by the forefinger of the left hand, dividing in its course the peritoneum, fascia abdominalis, and common integument, at the same time, and bringing more fully to view the tumour, which lay in front of the omentum. It was then evident that the tumour was too large to be extracted through the incision that had been made, and that consequently it could not be liberated except by extending the incision considerably above the umbilicus, or by still further reducing the volume of the tumour by puncturing other cysts. The latter alternative was adopted, and by this means there was additional effusion of cystic fluid into the cavity of the peritoneum.

The entire hand was next introduced into the abdomen, and carried behind the tumour to push it through the incision; but resistance was encountered, and in the effort necessary to overcome it, the posterior face of the tumour was lacerated by the points of the fingers, opening other cysts, whose contents escaped, in large part, into the peritoneal cavity. The mutilated tumour was, however, delivered at the expense of considerable stretching of the aperture which had been made for its release, and committed to the hands of an assistant, who raised it sufficiently to bring its pedicle to view. The pedicle was then punctured about an inch from its attachment to the tumour, and an aneurism-needle, armed with a strong double ligature of twine, was passed through it and securely tied. This being done, the pedicle was cut across close to the tumour, and there was no bleeding whatever from the cut.

The fluid of the cysts mingled with the blood effused from their torn and punctured walls, was carefully removed from the peritoneal cavity by sponging, and the left ovary subjected to examination. It presented a somewhat vesicular appearance, insomuch that it was thought to be in a diseased state by one of the medical gentlemen present, who suggested the propriety of its removal. But being unwilling to unsex my patient, without indubitable necessity, I suffered it to remain, and it has since done some service to the State, as will appear in the sequel.

The wound was closed with deep sutures, about an inch from the incised edges, through the parietes of the abdomen, avoiding the peritoneum, and about three-quarters of an inch apart. The edges of the wound were then brought more exactly in apposition by smaller interrupted sutures, passing through the skin only in the intermediate spaces between the deep ones. The ligatures upon the pedicle, which had been brought out at the inferior part of the wound, were tied to a piece of bougie to guard against their retraction into the abdomen, as well as to draw the end of the pedicle as near the surface as possible, and so avoid irritating the bowels by their contact. Long strips of adhesive plaster were applied over the superficial sutures to cover the wound and support the abdomen: compresses were placed vertically on either side of the wound, and a many-tailed bandage of flannel was pinned over the whole to complete the dressing.

The patient was greatly exhausted when the operation was finished; appeared restless, and vomited once. She was put to bed, and made as

dry and comfortable as possible; 40 drops of laudanum were administered, and she took brandy and water freely; a large sinapism was applied over the stomach, and bottles of hot water placed near the extremities. The nurse was directed to repeat 20 drops of laudanum every hour until composure ensued.

Night (nine hours after the operation). She had taken seven doses of 20 drops of laudanum; had not vomited any more; pulse good; extremities warm, except the toes. The urine was drawn off with the catheter. Two or three spoonfuls of chicken-soup every hour was ordered for nourishment, and the only medicine directed was laudanum, provided she complained of pain or restlessness.

October 1, 9 o'clock A. M. She had a pretty comfortable night, sleeping by naps; took laudanum once only; pulse 104; temperature natural; complains only of the wound. Catheter used, discharging half a pint of high-coloured urine. Prescription: To have soup more freely, and milk-toast. At 9 P. M., pulse 120; no pain. Catheter drew off, as in the morning, half a pint of high-coloured urine. Continue nourishment, and laudanum to keep down pain.

2*d*. Morning visit. She had rested well during the night; took small doses of laudanum occasionally; no pain, or abdominal tenderness or distension; catheterized; everlasting half pint of high-coloured urine. Prescription: Laudanum to quell pain, and for nourishment corn-bread, which she much craved, in addition to her soup. Evening visit. Pulse 104; no abdominal pain or tension; catheter; laudanum *pro re nata*.

3*d*. Morning. Complains of vesical uneasiness, and on introducing catheter found a larger quantity of urine not so high-coloured; dressed the wound, which looks well, and appears to be uniting by the first intention. Evening. Complains of considerable uneasiness from distention of the bladder; catheter; prescribed 40 drops of laudanum, and 20 drops to be repeated twice.

4*th*. Morning. Rested well last night; directed nurse to draw off the urine with catheter every six hours.

5*th*. The bowels not having been moved since the operation, a teaspoonful of sulph. magnesia was given, and followed by an enema in six hours, which procured two free evacuations. Doing well.

6*th*. The wound was again dressed; uniting; no suppuration; no tenderness, distension, or pain of abdomen; has a good appetite, and passes urine without the catheter.

From the last date to the 10th, nothing occurred worthy of special notice: with the aid of laudanum she rested well; the bowels were kept open with small doses of Epsom salts and enemata, and the wound firmly united, except at its inferior angle, where the ligature of the pedicle kept it open; her appetite continued good, and she complained only of a little dysuria. On the 10th of the month, which was also the tenth day after the operation, all the sutures were removed, and there was some suppuration about the ligatures of the pedicle. They were slightly pulled, but found not to have become detached. From this time to the 17th, the patient went on well, and on this day one of the pedicular ligatures yielded easily to traction, and was removed: the wound here was granulating. On the 19th, the other ligature came away, and the small wound, which was kept open by the ligatures, soon closed and cicatrized. Previously to this, the patient had been sitting up during a part of the day: henceforward,

until her husband came for her, on the 12th of November, she improved in flesh and strength; her countenance became more animated, colour revisited her cheeks, and she impatiently expected the return of her husband.

The remnant of the tumour, which was extracted in this case, weighed upwards of *eleven* pounds. It was multilocular in its character, as you will perceive from an inspection of it as it lies on the table before you. In its recent state, it bore unmistakable marks of having been the seat of acute inflammation, viz., its external surface presented, at various points, areas of considerable size, of a whitish colour, caused by deposits of lymph, and the internal membrane of the cysts that were opened was extremely red and highly vascular. This was especially the case with the largest cyst, in which fluctuation existed, and the fluid it contained appeared to be an exudate, most completely transformed into pus.

Remarks.—Mrs. Ashby's husband returned to the city, as already stated, about the middle of November, to take her home. I received a letter from him, in the course of a few weeks, informing me that her menses had not returned, and that she was complaining of nausea and occasional vomiting. Suspecting that she might have become *enceinte*, I wrote to Dr. Hale, of Hartford, the shire-town of Ohio County, early in the ensuing summer, and requested him to inform me of my patient's condition. The doctor very obligingly paid her a visit, and reported that her health was good, and that she was about seven months advanced in pregnancy. She has since been delivered of a living child, as I learn from the following letter from the doctor, which lays me under renewed obligation :—

HARTFORD, August 23, 1858.

DEAR SIR: I presume you would like to have some further and more definite information in regard to the case of Mrs. Ashby. She was delivered on the 16th instant of a living and well-developed male child, weighing seven pounds. I was called to her assistance, but arrived about two hours after her delivery. She had no help save that of two of the neighbouring women, who possessed no skill in that capacity. I was informed that she had an easier and more speedy labour than she had experienced in her former confinements. There are no signs of a return of the disease for which she underwent the surgical operation, which you performed. I heard from her yesterday; she and the child were both doing well. Yours respectfully, J. HALE.

From the dates, above referred to, it will be observed that the aptitude for procreation returned very early after my patient was freed from her ovarian burden. In fact, conception must have taken place either before she left the city, or immediately after she reached home.

I will now compile an account of my first case from the *Western Journal of Medicine and Surgery*, in which it was originally published :—

CASE I. Mrs. McLaughlin, widow, æt. 37, residing in the State of Indiana, came to the city, in the winter of 1847, to consult me in relation to a tumour in the abdomen, which was a source of no little annoyance to her on account of its size. On inquiry I learned that she had first observed a tumour, of small size, in the right iliac region, some time during the previous fall, which increased rapidly until it acquired its present magnitude. The menses had only appeared once or twice, and that in small quantity

and of short continuance, since the tumour first attracted her attention. She had felt no acute pain in the tumour at any time, and her general health did not appear to have suffered much, her appetite and digestion being pretty good.

On examination I discovered a large tumour in the abdomen, extending considerably above the umbilicus, and mostly occupying the right side, but stretching across the linea alba into the left side. Its shape was irregularly globular, and its consistency variable, being at some points much firmer than at others, and in portions of it fluctuation could be distinguished. Pressure upon it, even rough handling, gave no pain; and it appeared to be, in some degree, movable in the abdominal cavity. Examined *per vaginam*, the tumour could be felt within the pelvis, and the uterus was found in its normal condition.

The history of the case, taken in connection with the disclosures made by the examination, authorized the inference that the patient had multilocular dropsy of the right ovary. Upon being told that excision of the tumour afforded the only hope of a radical cure, the patient urgently demanded the operation, notwithstanding that she was made fully acquainted with its dangerous character. Indeed, its dangers were portrayed in more sombre colours than statistics strictly justified, for I would gladly have gotten rid of the case. I managed, therefore, to put her off on the plea of the unfavourableness of the weather—it being winter—and induced her to return home, taking with her some prescriptions which I hoped might benefit her.

In the first spring month following, namely, in March, 1848, Mrs. McLaughlin, true to her purpose, made her second appearance and avowed her determination to have the tumour removed by the knife. In sooth, she was not so well now as she was when she first came under my observation: the tumour had not, perhaps, sensibly increased in size, but she had perceptibly emaciated, and there was a frequency and quickness of pulse that betokened hectic irritation of her system. Her appetite had become poor, her bowels were irregular, and the tongue red and sore. It seemed, therefore, proper to get her system into a better state before resorting to an operation, so likely to test its powers of endurance; and, accordingly, she got mild alterative and aperient medicines every day until the secretions became healthy, the tongue more natural, and the pulse less accelerated.

On the 29th of March, 1848, a council was convened, consisting of Prof. Gross, and Drs. Bayless, Colescott, and T. L. Caldwell, at which it was judged advisable, at that time, merely to puncture the tumour, where fluctuation was most evident, with the view of diminishing its size and of allowing further time to improve the general health. I accordingly punctured it with a trocar, in the linea alba, about three inches below the umbilicus, and discharged *twelve pints* of a whitish, ropy, albuminous-looking fluid. When the fluid ceased to flow, the abdomen was flaccid to the left of the linea alba, and also a short distance to the right; but in the right iliac region, reaching up to the ribs of the same side, it still felt hard and unaltered in shape. No unpleasant symptoms followed the operation, and the puncture soon healed.

Operation.—On the 6th of April, 1848, the operation of extirpating the encysted tumour of the ovary was performed, with the valuable aid of Prof. Gross, and Drs. Bayless, Colescott, W. B. Caldwell, and T. G. Richardson. The patient being placed upon a table, on her back, her feet resting on a chair, and chloroform having been administered, an incision was made

through the integuments over the linea alba, from the umbilicus nearly to the pubes. The fascia and peritoneum were then divided, by several strokes of the scalpel, at the superior part of the incision, and a finger introduced to guide the probe-pointed bistoury, with which an incision was made through these tissues corresponding to that of the integuments. The tumour was now brought to view and found adherent, though not very firmly, to the omentum and parietes of the abdomen. To break up these adhesions, obstetrician-like, I passed my hand into the abdominal cavity and around the tumour, and had no difficulty in accomplishing the object. It being now ascertained that the tumour was too large to be brought through the opening that had been made, two of the cysts were punctured and a quantity of fluid discharged, resembling that which had been drawn off by tapping, a week previously; the quantity could not be estimated, as it was suffered to run upon the table, whence it flowed on the floor and across the room, there being no vessels at hand to receive it. By getting my hand posterior to it, I now drew the tumour through the incision and supported it while Dr. Gross secured its pedicle by a strong ligature, passed through the broad ligament and tied round the Fallopian tube and ligament of the ovary: its connections were then severed by cutting across the broad ligament near the inferior portion of the tumour. Finding that the vessels of the outer extremity of the broad ligament bled considerably, they were secured by another ligature which included the whole of its margin.

The tumour being removed, the cystic fluid which had been effused, in considerable quantity, into the abdominal cavity, and likewise the blood, were carefully sponged out, when the wound was closed by the interrupted suture, adhesive strips, compresses, and bandage—the ligatures having been brought out at the inferior part of the incision. The operation was commenced at 1 o'clock P. M., and the patient was put to bed in less than an hour, having borne it remarkably well; in fact, she felt, as she declared, very little pain, being all the while under the influence of chloroform.

5 o'clock P. M. same day. The patient is comfortable; pulse 68, and of good volume; she has vomited once, and complains still of occasional nausea. Gave 30 drops of laudanum, which is to be repeated in an hour, if not relieved. At 10 o'clock P. M. she was alarmed by discharge from the wound, following vomiting, and I was sent for. Notwithstanding she appeared fully as well as at previous visit, yet to allay her fears, the dressings were removed, when it was discovered that there had been a free escape of bloody serum, most probably a remnant of what had been effused during the operation.

April 7. Morning. Found my patient doing well; no pain, or sickness, or tenderness of the abdomen; but she had slept little or none; had not urinated, and said she could not in recumbent position to which she was confined; catheterized; ordered to be kept quiet, and to have no nourishment but rice or weak tea and toast. Evening. Slight febrile excitement; pulse 72; skin warm; had slept some, and passed urine.

8th. Morning. Passed a good night; complains only of weariness of confinement to back; appetite; has urinated; pulse 68. Evening. Pulse 68; nothing worthy of notice has occurred.

9th. Morning. Had slept well; cheerful; pulse 68; no pain; tongue slightly furred; bowels not having been open since the operation, attempted to relieve them by a large warm-water enema, but very little feces were brought away by it. Evening. Has had some pain in bowels during the

day; tongue not more coated than in the morning; a little fulness in epigastrium; prescribed a purgative of blue mass, rhubarb, aloes, and soap.

10*th*. Morning. The medicine not having operated, ordered the syringe again, but without effect; no pain or swelling of the abdomen; rested better last night than since the operation; pulse 68. Evening. Bowels not having acted, ordered a tablespoonful of castor oil, to be repeated, if necessary.

11*th*. Morning. The oil had purged her freely several times in the course of the night; no complaint. Evening. Nothing to note.

Henceforward a diary would not be interesting. Suffice it to say that no unfavourable symptoms occurred at any time. Her appetite continued to improve, and the bowels acted naturally, or, at most, she took a little oil once or twice. The wound was examined on the 16th of the month, but finding that it was not yet firmly united, the sutures were not cut, nor were the ligatures of the pedicle pulled. On the 19th (thirteenth day after the operation), there being some suppuration about the sutures, they were removed, and the adhesive strips, compress, and bandage replaced; the ligatures were not touched. On the 25th (nineteenth day after the operation), one of the ligatures yielded to gentle traction and was removed; but the other, though tried at every dressing, did not yield until the 7th of May (thirty-first day after the operation), at which time the wound was firmly closed, except the small opening through which the ligatures were brought out. The next day she started home, where she arrived without accident of any kind.

The tumour in Mrs. McLaughlin's case, as in Mrs. Ashby's, was multilocular in its structure, and weighed, notwithstanding its copious depletion by tapping, *nine and a quarter pounds*. A preparation was made of it, which was destroyed by the burning of the Medical College, on the last day of December, 1856.

Through the kindness of Dr. CHARLES L. HOOVER, of New Albany, Ia., I have been enabled to trace the history of Mrs. McLaughlin subsequent to the operation. The doctor is acquainted in her neighbourhood, and did me the favour to write to a medical friend residing there, from whom was obtained the following information, which he obligingly communicated to me by letter, under date of September 26th, 1858.

Mrs. McLaughlin did not marry again, but her health continued good, in every respect, until within a short time previous to her death, which occurred in November, 1855, *seven years and six months* after she returned home. Her catamenial discharges were regular and normal up to the last few months of her life, when they became irregular and profuse, owing, as it was supposed, to her peculiar age. She is stated to have died of a congestive chill, her menses being on her at the time, in inordinate quantity, though they had been scanty at the two menstrual periods immediately preceding. "There had been," the doctor remarks, "no visceral disturbances—no indurations; nor had the other ovary suffered in any way."

Having brought together the two cases in which I deemed it expedient

to extirpate encysted tumours of the ovaries, I shall now state the grounds on which I judged the operation to be not only proper but indispensable. As, however, the nature of the disease itself is largely entitled to our consideration, when we are seeking an appropriate and adequate remedy, I must beg indulgence whilst I endeavour to unfold, very briefly, the pathology of cystic growths of the ovaries. To Dr. Hodgkin we are, as I conceive, chiefly indebted for our knowledge of the subject, and I shall attempt but little more than to present the results of his inquiries, venturing only to throw out a single suggestion, which has been prompted by a careful examination of the specimen before us.

The ovary may be the seat, 1st, of a simple cyst; 2d, of a compound cyst, formed of a capsule containing secondary, and even tertiary cysts. The first of these, we have good authority for affirming,[1] seldom becomes larger than an orange, and is for the most part only detected after death. By Dr. Hodgkin, however, we are told that when these simple cysts are formed in the folds of the broad ligament, or intimately connected with the ovaries, if not imbedded in their substance, they at times acquire a very large size and constitute one of the forms of ovarian dropsy.[2] There can, nevertheless, be no doubt that it is with the compound ovarian cysts we are chiefly concerned when surgical intervention is called for; we shall, therefore, confine our attention to them.

Cysts of this second kind do not acquire their complexity by the aggregation of a number of simple cysts; but they are originally single, and become compound in consequence of the remarkable property which their parietes possess of producing other cysts of a similar character with themselves, on which account they have been denominated by Mr. Paget[3] "proliferous" cysts. These secondary cysts are endogenous in their growth, and encroach upon the cavity of the primitive cyst in proportion to the size they attain. The forms they assume are various: they may be pedunculated, hanging by slender stalks in the cavity of the principal cyst, each having its own peduncle, or a number being suspended by a common peduncle; or they may be broad and flattened—compressed and bound down, as it were, within the parietes of the principal cyst. Dr. Hodgkin commences his description of them with a form intermediate between these two extremes to which our specimen belongs, because it best exhibits the peculiar structure of these growths; for herein they are evidently cysts of like structure with the principal cyst, whose cavity they invade, and may eventually occupy completely, as they do in the tumour before us.

The tissues of which these cysts, whether of the primary, secondary, or

[1] Prof. John Hughes Bennett, of Edinburgh, in his recently published work, Clinical Lectures on the Principles and Practice of Medicine, p. 714.

[2] Lectures on the Morbid Anatomy of the Serous Membranes, p. 147.

[3] Lectures on Surgical Pathology, Phila. ed., 1854.

tertiary order, are composed, are richly supplied with blood, and the lining membranes of all of them pour out abundantly a secretion, which fills and distends them. This secretion, serous in its character in the early period of the disease, becomes albuminous, and sometimes quite tenacious, at a later period, and with it may be mingled pus or blood, imparting to it a yellowish or chocolate colour.

Various changes are liable to occur in the cysts contained within the primary one. Those of the secondary order may be extensively ruptured by the development of the cysts within them, or small apertures may be formed, the result also of distension: in either case, they pour out a part of their contents into the interior of the larger cyst. In both events, but especially in the latter, as Dr. Hodgkin remarks, "the opened cysts bear a considerable resemblance to mucous follicles on a large scale; and appear to be the principal source of the very copious and rapidly produced mucous secretion, which is a characteristic feature, in many cases of ovarian dropsy. This mucus bears a very close resemblance to that of the follicles of Naboth; and is frequently so viscid, that it passes with difficulty through the canals."

Again, the internal cysts, distended with fluid, may press upon each other to such a degree as to arrest further growth, at certain points, and cause the absorption of the intervening tissues, by which a multilocular cyst is formed. By such a process as this, the cavities within the tumour become less numerous but larger, whilst the bands stretching across them are all that remains of the partitions that had originally divided it into many separate compartments. The operation of this principle of change is well illustrated by the largest cyst in the preparation before us—that which occupied the superior part of the tumour, which was punctured during the operation, and from which flowed the puriform fluid. Nor is the external sac exempt from the effects of such an influence: should the pressure act upon it, it may become thinner and thinner until perforations are produced in its coats, through which, as Prof. Bennett has particularly pointed out, the fluid contents of the cyst escape into the abdominal cavity, making it necessary to resort to the operation of paracentesis.

At an advanced period of the disease, inflammation often takes place in the structure of the containing as well as of the contained cysts, but especially of the latter, which, according as its product is of the plastic or inorganizable kind, leads to the formation of adhesions between them, or purulent deposits within their cavities. The fatal progress of the case is greatly accelerated by this event: if the pus escape through perforations in the external sac, peritonitis is excited; if it is retained within the cysts, irritative fever is set up, and the patient sinks exhausted, whether the fluid be evacuated by paracentesis or not.

With respect to the anatomical nature of the tissue composing the parietes of ovarian cysts, pathologists do not appear to be agreed. Dr.

Hodgkin, for example, considering it adventitious serous membrane, whilst it is regarded by Dr. Bennett as fibrous, in the greatest thickness of the cysts, lined by a delicate membrane covered with epithelial cells. An attentive observation of the specimen on the table has led me to the conclusion that, whatever may be the anatomical character of the tissue itself, the principal thickness of the cystic walls is made up of minor cysts, filled with a glutinous fluid. After the preparation had been kept in alcohol for nearly a twelvemonth, it was taken out of the jar by the Curator of the College, Dr. Bayless, and myself, for the purpose of making a dissection of it. We found, upon cutting into the cavity of the cysts, which had not been opened before, that their walls were upwards of an inch thick, and that notwithstanding the cut surfaces were smooth at first, upon macerating them in water and subjecting them to strong pressure with the hand, a great many lumps of a whitish inorganic substance were forced out, bringing to view, as you may perceive, a cellular structure resembling very coarse sponge. The entire thickness of the cyst-walls exhibits this spongy appearance, and there is nothing left but the cellular tela in which the concrete masses of the albuminous secretion, hardened by alcohol, had been imbedded. From these appearances it may, I think, be inferred, so far as a single observation can justify an inference, that even the parietes of these cysts are cystic in their structure, or, in other words, are made up chiefly of an innumerable progeny of minor cysts.

In calling your attention, for a few moments, to the *therapeutics* of encysted tumours of the ovary, I shall confine my remarks to what has been proposed or attempted with a view to the radical cure of the disease. The interest of the subject has been latterly very much enhanced by the supposed discovery of a substitute for excision, which consists in the puncture of the cyst or cysts, and the injection of tincture of iodine into their cavities to destroy their secreting property. This was the principal theme in a late highly interesting discussion of the subject of ovarian cysts in the Imperial Academy of Medicine, at Paris, in which participated such men of renown as MM. Malgaigne, Cruveilhier, Velpeau, Moreau, Cazeaux, Piorry, Jobert (de Lamballe), Trousseau, Cloquet, Robert, Huguier, Gimelle, Guérin, Barth—in a word, the representative men of the several departments of medical science and practice in the French capital. The discussion was continued through several sessions of this learned body, and published in successive numbers of the *Bulletin de l'Académie Impériale de Médecine*, beginning with the number for October, 1856, and concluding in February following.

It is remarkable that in this large and magnificent assembly, only one voice was heard from the tribune in vindication of the extirpation of diseased ovaries, under any circumstances, and that voice, I rejoice to add, was M. Cazeaux's; I rejoice because the laurels, which the illustrious speaker has won, have been gathered from the obstetric field, in which I

am myself an humble labourer, and because, moreover, it is my firm conviction that the closer contact and greater familiarity of all such with the peculiar diseases of the sex, entitles their opinions to the very highest deference. By all the other speakers, who expressed their sentiments on the question, ovariotomy was scouted as a rash and wholly unjustifiable operation. The operation, said M. Malgaigne, appears to me infinitely too radical, and well calculated to secure women too absolutely against the danger of relapse. The statistics which have been alleged, he exclaims, prove nothing; we know the value of statistics, where all the success has been collected, but the reverses are concealed. It is conceded by M. Piorry that when ovarian tumours have acquired a certain magnitude, and are withal movable and unattached, we might rigorously attempt their excision; but, he hastens to add, to do this one must possess American audacity (*une audace Americaine*), and though he admits not the separation between physic and surgery, he avows that he will leave such an operation to other hands than his own. Notwithstanding the judgment pronounced against ovariotomy from the tribune of the Imperial Academy, specimens only of which have been cited, it were easy to show, by the confessions of the judges themselves, that neither iodine injections, nor any other measures that have been proposed, hold out the faintest hope of cure to miserable women, pining under *multilocular* cysts of the ovary, and doomed to inevitable death at no distant period. Hear M. Cruveilhier: after having pointed out the pathological differences among ovarian cystic growths, he divides them into two very distinct categories; the one comprehending the species which are, to use his own language, "marked with the seal of incurability;" the other, comprehending the curable species. The species which are absolutely incurable are:—

1st. Areolar cysts, whose incurability results from their nature, which is in no wise cancerous, but from the viscidity, the non-fluidity of the albuminous or gelatinous matter which fills the cells.

2d. Vesicular cysts, whose cells, whether communicating with each other or not, are equally filled with viscid liquid.

"For these kinds of cysts," he declares, "there is no treatment, either palliative or curative." "No palliative treatment," he continues, "for puncture of the cysts discharges little or nothing; no curative treatment, for there is but one mode of cure, namely, extirpation; and although extirpation of ovarian cysts may have been inspired, in some sort, by the isolation of the cyst, by the perfect integrity of the surrounding organs, by the facility of the operative procedure; although it may have been practised a great many times with success, especially in England and America, I do not think that this bold operation is entitled to be cited in science; rash enterprises are not always justified by their success." From the concluding moral of this quotation we beg to dissent. In a condition of peril, abandoned by the prudent and scientific as utterly hopeless, we hold that any

way of escape that may be opened is justifiable and manifestly better than no way at all. It is surely better *anceps auxilium experiri quam nullum*, if there be any truth in Celsus.

The inapplicability of iodine injections to cases of multilocular cysts of the ovary is one of the therapeutical facts most indubitably established by the discussion we are reviewing. Among all the French practitioners, who have made trial of this method, M. Boinet would appear to have had the largest experience of it, and the results of his practice are fully communicated by M. Cazeaux, in the course of the debate. According to his report, iodine injections were employed by M. Boinet in 44 cases, occurring among women, whose ages varied from fifteen to seventy-eight years, and were equally well borne by all. To judge of the results, the cases are classified according as the cyst was unilocular or multilocular, and also according to the quality of the liquid contained therein: 30 of the cysts were unilocular, of which 21 contained a serous fluid, of a citrine colour, and flowing freely; 2 contained a slightly sanguinolent liquid; 6 a liquid purulent or sero-purulent; 3 an hydatic liquid; 1 was complicated with fibrous tumour. Of the 21 serous unilocular cysts, 19 were cured after one or many punctures and injections; 2 died of peritonitis and purulent absorption. Of the 2 women who had sanguinolent liquid, one was cured; and the other, who had two cystic tumours, was cured of one of them, the other tumour being reproduced—one cure, one failure. Of the 6 purulent cysts, 4 cures, 1 relapse, 1 death. The 3 hydatic cysts were all cured. Thus, out of the 32 cysts, pertaining to 30 patients, the results were 27 cures, 3 relapses, and 2 deaths.

The results of the operations performed on multilocular cysts were much less favourable. Eleven cases of this kind were treated by M. Boinet; 6 died, 5 were not cured and were considered by him incurable! M. Cazeaux cites a number of cases reported by other practitioners, which need not be particularly referred to; they all agree substantially in this, that whereas unilocular cysts may be obliterated by iodine injections, or at least made to cease secreting, multilocular cysts are incontrollable by such appliances. Nor is it difficult to assign a satisfactory reason of the difference; it is not possible, by a single puncture, to make the injection penetrate the numerous separate cells composing such a structure. From the nature of the case, as well as from the testimony elicited by this discussion, we may safely conclude that multilocular cysts of the ovary are wholly beyond the therapeutic powers of iodine injections.

But I have ventured to affirm that compound cysts of the ovary are alike impregnable by all the means that have been brought to bear upon them, short of their complete extirpation. The minor incision, for example, by which only a small opening is made into the cavity of the abdomen to gain access to the ovarian cyst and to excise a portion of it, in order that its secretions may ever afterwards escape into the peritoneal sac where they

may be absorbed, is confessedly applicable only to cysts of the unilocular kind. Of what avail could it be to slice off a portion of one of the many cysts that constitute in the aggregate multilocular tumour of the ovary?

Far be it from me to wish to depreciate the value of iodine injections in unilocular ovarian cysts; but it may be reasonably feared that too sanguine hopes, inspired by the disclosures of the French Academy, may be dashed by future and more extended experience. In so far as the term "unilocular" is restricted to *single* cysts in contradistinction to *compound* cysts, we may indulge the hope that such may be incapacitated for further growth and future mischief by the modifying influence of iodine topically applied. But it is very evident that under this appellation tumours are often included, which are identical with the multilocular. We have seen that the tendency of multilocular cysts is from the complex to the simple, by reason of the absorption of their intervening walls; and this process may be continued until but a single great sac is the product, with only the vestiges of the septa that had originally divided it. Then, again, development may, from the beginning, be concentrated in one only of the numerous cysts of a compound tumour—the rest being kept in abeyance within the parietes of the exuberant one, or else hanging by slender peduncles within its cavity. In either case, though there be one great cavity, there are present all the elements of a compound growth, which may be stayed, for a time, by *iodination*, only to renew their march of development after their leader has been vanquished. In this state of dubious truce, I suppose the disease to exist in all those cases of so-called cure of ovarian cysts by iodine injections, in which it is reported, many months after the operation, that a tumour of considerable size could still be felt in the abdomen. There is reason to suspect this multiple nature of "unilocular" cysts when their walls are thick and their cavities are filled with a glutinous fluid. In such, so far as the rather meagre statistics, furnished by the Academy, can enable us to judge, iodine has had but poor success, and is scarcely less fatal than the excision of the whole of the diseased mass.

On the whole it may be concluded that the treatment of ovarian cysts by iodine injections and the excision of a portion of the cyst has only a limited application, and that where the cysts are compound in their nature, there is and there can be but one method of effecting a radical cure, namely, the total extirpation of a growth, which, though not heterologous, possesses such amazing fecundity of soil, and leads, sooner or later, to dissolution. To me it appears that no indication of treatment, even the best established and the most generally recognized, is clearer than this, or better entitled to universal reception. The brief but cogent reason assigned by Celsus to justify the extirpation of a gangrenous limb, is equally applicable to such an irrepressible growth—*Nihil interest an satis tutum præsidium, quod unicum est.* The only question, in my opinion, of doubtful disputation, is the stage of the malady and the circumstances accompanying it, which

plenarily justify a resort to the operation of ovariotomy. These must, of necessity, be discussed and settled in each particular case, after a full survey of the condition and prospects of the patient. So long as the tumour is of such moderate dimensions as to give but little mechanical inconvenience, and to interfere but little or none with the functions of digestion and nutrition—the patient suffering but little, and being capable of fulfilling many of the duties and enjoying most of the pleasures of life—nothing but an insane *cacoethes secandi* could tempt a humane practitioner to think of subjecting her to the pains and perils of the operation. But when the tumour has acquired such volume as to fill and distend the abdomen, making exercise difficult and all duties a burden; when by its encroachment on the abdominal and thoracic organs, their functions are embarrassed, and increasing debility and emaciation are the consequences; when pain and tenderness of the morbid growth evince the presence of inflammation in one or more of its cysts, and the resulting quickened pace of the circulation is contributing to derange still further the lost balance of all the functions of the economy; these are all significant warnings of approaching danger, and declare audibly that the patient's days are numbered, and that without the decisive interposition of chirurgical art, she must be speedily consigned to the tomb.

Speaking from my own experience, I would say that the disease seldom or never reaches the stage demanding the operation, before the patient's mind is fully made up to brave its hazards, for the sake of the chance it affords, be it ever so small, of throwing off her intolerable burden. There is, consequently, no necessity of persuading her to submit to it; nay, the difficulty not unfrequently is to gain her consent to have it postponed, and this too with the gloomy statistics of the operation staring her in the face. With this intimate sentiment that life to her is not worth possessing, and the abiding conviction that its flame is flickering in the socket and must soon become extinct, it may well be asked, what right has the surgeon to refuse the operation, which she claims at his hands, were it attended with even greater risk than experience has indicated?

Indefensible as is the position of M. Cruveilhier in reference to ovariotomy, he is, nevertheless, strongly fortified in it by surgical authority, for not only in France, but also in Great Britain and the United States, the great surgeons, with hardly an exception, have set their faces against it, and it has yet to find its way into a single systematic treatise, ranked among legitimate surgical operations. Meanwhile, it has been successfully practised in scores of cases, and ably advocated chiefly by surgeon-accoucheurs, and there cannot be a doubt that the reproach of bastardy will be ultimately wiped from its escutcheon.

Mr. Liston, it is true, introduces the subject in his *Lectures on the Operations of Surgery*, but only with the view of condemning the operation, in the most unqualified terms, as "exceedingly unjustifiable," and of

informing us that he "has always set his face against it," and he "thinks always shall." His American annotator, Prof. Mütter, is "truly gratified to find Mr. Liston throwing the weight of his great authority in the balance against the operation of '*ovariotomy.*'" But this is a question which, involving, as it does, the dearest interests of womanhood, is not to be decided by authority, however ponderous; our appeal is to the higher tribunal of reason and experience.

The objections against ovariotomy are many and various; they have been mustered in strongest array by Prof. Mütter, in the work just cited, as follows:—

"1st. The difficulty of arriving at a just diagnosis. 2d. The danger of the operation itself. 3d. The nature of the disease does not sanction so violent a remedy. 4th. It is contended that palliatives will often succeed in making a patient comfortable during a long life. 5th. An operation does not always succeed in relieving a patient radically, even when she escapes the dangers immediately consequent to its performance. 6th. The disease may terminate spontaneously."

Bear with me whilst I attempt, briefly as possible, to inquire into the validity of the specifications adduced to substantiate each of these objections.

1st. *The difficulty of accurate diagnosis.*—I have no wish to disguise the fact, lamented by all practical men, that it is very difficult, sometimes impossible, to diagnosticate the precise nature, seat, and connections of tumours, deeply buried in the cavity of the abdomen. Nor must it be denied that gastrotomy has been performed for the purpose of extracting ovarian tumours, when, as it turned out, no tumour of any kind was found. Mr. Lizars' first operation, in 1823, was an instance of this kind—the operator being deceived by great obesity and distended fulness of the bowels—and five similar cases have been collected by Dr. Washington L. Atlee, of Philadelphia, and published in his *Table of all the known Operations of Ovariotomy*, from 1701 to 1851, which comprises 222 cases. In a still greater number of instances, after the abdomen was laid open, it was discovered that the tumour was uterine instead of ovarian, and the uterus even has been removed.

We may not hope to attain absolute perfection of diagnosis, either in relation to abdominal tumours, or any other malady incidental to our frail human nature—for even surgeons of deserved renown have been known to cut for stone in the bladder without finding one—but yet it is certainly true that the diagnosis of the diseases of the internal organs of generation in females has been vastly improved, since many of the mistakes were made, which are now quoted to disparage ovariotomy. For this improvement we are largely indebted to the uterine sound, the use of which, in connection with a careful digital exploration *per vaginam*, is capable, in many cases, of rendering the diagnosis of ovarian tumours as clear and precise as could be desired, so that not the shadow of a doubt need remain. Certainly this

was true in my own cases; ocular inspection could not more clearly have revealed their true nature. It will not, I hope, be deemed presumptuous in me to intimate here that one reason of the aversion of great surgeons to ovariotomy may be that, in the lack of an experienced vaginal touch, they are compelled to rely mostly on palpation through the walls of the abdomen, in forming their diagnosis of tumours contained within its cavity. If this be so, I do not wonder at the painful incertitude, which must perplex them after the most careful investigation, and indispose them to cut into the abdominal cavity at a venture. It is only a few days since I saw a striking exemplification of the insufficiency of abdominal palpation to elucidate the nature of tumours in this region. I was requested by an eminent practitioner to see a lady patient of his, who, he supposed, had ovarian tumour, and might be a good subject for an operation. Upon examining the abdomen, its great size, unequal distension, and hardness of feel, inclined me strongly to the opinion that the case was one of multilocular cysts of the ovary, and had there been no means of correcting this impression, I should have continued in that mind. But on touching *per vaginam*, I was soon convinced that the tumours were of the uterus, for the os was high up, and the cervix and body merged in the inferior part of the tumour, from which it could not be isolated or distinguished. From all that I have seen I am persuaded that, in the advanced stage of compound cystic tumour of the ovary, when alone an operation would be justifiable, errors of diagnosis need not be more frequently committed than in many other surgical diseases.

2d. *The danger of the operation.*—Under this head Dr. Mütter enumerates the diseases and accidents, not forgetting the *extreme suffering*, which may lead to a fatal termination. The suffering may be averted by chloroform, but no art or skill can prevent the occasional supervention of peritoneal inflammation, hemorrhage, shock, &c., which after this, as after all other great operations of surgery, may prove fatal. But the argument proves too much, for if it is valid against ovariotomy, it is equally so against amputation, the ligature of large arteries, and other capital surgical operations. Nor can it be shown that extirpation of ovarian tumours is attended with greater mortality than many of these, which are the boast of modern surgery. The statistics of ovariotomy establish this fact beyond all doubt, and it is vain for Dr. Mütter to attempt by a mere fling to impeach their truthfulness: no statistics in all surgery are more trustworthy or better authenticated. The rate of mortality of ovariotomy operations, according to Dr. Atlee's table, is 26½ per cent., and it cannot be doubted that this will be very much diminished by confining the operation to cases for which it is suited, which our improved diagnostics will enable us to do, and by improvements in the *methodus operandi* itself.

"But," says Dr. Mütter, "I am not disposed to estimate the merits of this measure by statistics, nor should it be thus contrasted with other capital

operations." Why not? Because it smacks of illegitimacy? Let us hear. A writer in the *Edinburgh Medical and Surgical Journal*, for April, 1844, has, as Dr. Mütter conceives, taken the correct view of the bearing of the whole matter, and as his remarks are brief, the doctor begs leave to introduce them. Leave granted.—"If," he observes, "we look alone to the mortality, independently of all other considerations, and assume the above tables as correct in giving the ratio of mortality for the large abdominal incision, we find that it is not greater than for other great surgical operations. Thus, M. Malgaigne has shown that in all the Parisian Hospitals, from 1836 to 1840, inclusive, 201 amputations of the thigh took place, but of this number 126 died; and the result of amputations of all kinds showed a mortality of 38 in the 100 for *pathological* causes, and 40 in the 100 for *traumatic* causes. M. Textor, on the other hand, in mentioning the statistics of strangulated hernia, treated at Wurtzburg from 1836 to 1842, states that of those subjected to an operation, 32 were cured and 24 died, or 3 out of every 7 cases; while at Paris the mortality was 4 out of 7 cases. All this would seem, therefore, to be a strong proof of the legitimacy of the abdominal section, seeing that the mortality is not so high for it as for those surgical operations. This is quite true, but the difference between the one operation and the other is this, *that the one saves 3 out of every 7 patients, who could not by possibility survive even a few days, were the operation postponed; and the other sacrifices one unnecessarily to prolong for a few months or years the lives of two, who would, perhaps, after all have lived as long had no operation been performed!* In the one case the amputation, or the operation for hernia, is performed for the legitimate purpose of saving life, which otherwise could not be saved; in the other, or the abdominal section, life is heedlessly sacrificed in the attempt to relieve what, after all, is only a burden, and has never yet been found to shorten the average duration of human life. In the one case the surgeon is acting in conformity with the highest principles of humanity and morality, doing all he can to save the life of a fellow-creature; in the other, while we cannot deny that he may conscientiously believe that he is undertaking what is to save life, we fear he is often influenced more by the eclat of performing a great and dangerous operation."

In the foregoing extract, quoted with unqualified approval by Dr. Mütter, it will be observed that there are two affirmations, both of which must be made good, else the argument falls to the ground by its own weight: 1st. That the patients subjected to operation for strangulated hernia, and to amputation for *pathological* causes, could not possibly survive even for a few days, without the operation. 2d. That women labouring under ovarian tumour will live as long without an operation as with it. In regard to the first affirmation, you hardly need to be reminded that, taking even the most urgent and apparently desperate class of cases, namely, strangulated hernia, spontaneous reduction of the bowel may take place, even after stercoraceous vomiting has set in, or failing this, nature's surgery may rescue the patient from impending destruction by involving all the parts implicated in gangrene, and establishing an artificial anus. With reference to diseases requiring or supposed to require amputation, the affirmation of our author must obviously be received with much allowance for the fallacy of the most

enlightened judgment of the surgeon. Among the most frequent of the pathological causes, for which amputation has been practised, we may, perhaps, assign strumous disease of the bones and joints—the localization of a constitutional malady. It is to be feared that, in not a few instances of this kind, limbs are sacrificed which might have been saved, and in others, no advantage is gained by the operation, the constitutional taint remaining and localizing itself anew. Even when the necessity of amputation, in such cases, is indisputable, it can seldom be affirmed, with truth, that without the operation the patient could survive but a few days, for if danger be so imminent, it must be from extreme exhaustion, which should countermand a resort to the knife.

The second affirmation is still less tenable than the first, or I should rather say that it is wholly gratuitous. The writer, it is true, admits that the ovarian malady is a "burden," but then he ventures to assert that it is light, and "has never yet been found to shorten the average duration of human life!" Could this bold assertion be substantiated, it would be decisive of the question, and all would unite in denouncing ovariotomy as an inhuman operation. But unfortunately experience does not bear it out, for when we come to consult statistics, it is found that the average duration of encysted tumours of the ovary, treated only by medical means, is only two years, and none of the women thus affected lived longer than four years! Such is the teaching of the statistics collected by Mr. Thomas S. Lee, and published in his work on *Tumours of the Uterus and its Appendages*, as quoted by M. Cazeaux, in the debate at the French Academy. M. Cazeaux, after referring to the English author's statistics, remarks that he had hoped to gather a larger mass of evidence on this point by addressing letters of inquiry to numerous practitioners, but that he had been disappointed. His researches, however, so far as they were successful, go to corroborate those of Mr. Lee: for having collected 31 cases, he found that 7 only of the patients lived more than ten years, whilst the remainder lived on an average from two years to two years and a half, dating the disease from the time when the tumour had acquired appreciable volume. M. Cazeaux allows, however, that too much value must not be attached to these statistics, as it is highly probable that fortunate cases, being less interesting, are not published so frequently as the unfortunate ones. Making due allowance for this source of error, he is still of the opinion that when an ovarian cyst manifests a continual tendency to grow, and contains already from four to five *litres*[1] of liquid, the patient cannot on an average count on more than four years of existence. Not even this lease of four years' life is put in jeopardy by the operation I am defending, for it were easy to show, by a reference to cases, that before extirpation was resorted to, the tumour had attained to much greater size than that indicated by M. Ca-

[1] A French *litre* is a little upwards of a quart.

zeaux, and the failing flesh and strength and ill-performed functions of the patient betokened the near approach of a fatal termination, so that, in most, if not in all instances, only a few weeks or months of miserable existence were to be spun before the thread of life would have been snapped—existence, as has already been said, so dreary and so hopeless withal that the patients were most willing to risk it for the chance of relief held out by the operation.

3d. *The nature of the disease does not sanction so violent a remedy.*—To support the flattering prognosis of ovarian tumours, declared under this head, the opinion of the celebrated William Hunter is quoted, who stated "that a patient will have the best chance of living longest under it who does the least to get rid of it! This opinion is fully indorsed by Dr. Mütter, who further asserts "that it has not, as yet, been proved to have materially shortened the life of the patient, most of those who die of it reaching an average age." This objection has been already answered anticipatively; and it must, I think, be admitted that it has *now* been proved, if it had not been when Dr. Mütter wrote, that the disease is not so innocuous as it was formerly regarded.

4th. *It is contended that palliatives will often succeed in making a patient comfortable during a long life.*—In the advanced stages of the disease, when the tumour is large, or inflammation has taken place, it is alleged that rest, counter-irritation, leeches, anodynes, cathartics, low diet, and mechanical support, and when the distension is very great, *tapping*, will, for the most part, be sufficient for the relief of the most urgent symptoms. I will not depreciate the value of some of these means of palliation, but I do of course question their power to make a patient comfortable during a *long* life, for the simple reason that such a life is not allotted her. At the same time I am obliged to confess that these boasted palliatives are often miserable comforters at best. Take *tapping*, for example, which is usually reckoned foremost among them, and it must be allowed that the relief it affords is but momentary, while, if it be often repeated, the equally often repeated refilling of the cyst, by the drafts made upon the system, hurries on the case more rapidly to its mortal catastrophe. Nor must it be forgotten that tapping can, in the nature of the case, give only partial relief in multilocular cysts of the ovary, as only one cyst, though it be the largest, is usually punctured in the operation. Still less must the fact, not, perhaps, familiar to all, be overlooked, that the simple puncture of ovarian cysts is an operation by no means free from danger, as death has not unfrequently resulted from it within a few hours.

The estimate which has been expressed of the palliative tapping of ovarian cysts is fully warranted by statistical evidence, for in a communication addressed to the French Academy, pending their discussion of the subject, Dr. Schnepf presents a *resumé* of a long and laborious article by Dr. Fock, on the *Surgical Treatment of Cysts of the Ovary*, in which the results of

the various methods of treatment are furnished. From this work it appears that palliative puncture was practised by Southam, Lee, and Kiwisch, in 132 cases: of this number of patients, 25 died a few hours or days after the operation, 24 within six months, 22 before the end of one year, 21 within the second year, and 11 within the third year. "From these facts," he observes, "it appears that most often puncture accelerates both the progress and fatal termination of the disease, and that it ought not to be employed, except when a radical cure is out of the question."

5th. *An operation does not always succeed in relieving a patient radically, even when she escapes the dangers consequent to its performance.*—A strange objection indeed! Where is the operation in surgery, even of the purest legitimacy, that can produce such a record and challenge our acceptance by its universal success? The cause of possible failure, specially signalized by Dr. Mütter, is complication of malignant disease, for then there may be "relapses or formations of malignant diseases in other organs, from which the patient ultimately perishes." There is, truly, a possibility of such complication in cases of cystic disease of the ovary, though experience proves that it is rare, and when it exists the operation will serve no other purpose than, perhaps, to prolong somewhat the life of the patient. But this objection comes with an ill grace from legitimate surgery, one of whose practices it is to excise parts affected with cancer, with the hope of prolonging life thereby, though it be infallibly certain that the disease, being constitutional, will recur and put an end to the patient's life, at no distant period. Such is the practice recommended by Mr. Paget, whose authority will not be impeached, and whose surgical orthodoxy will not be questioned. The removal of scirrhous cancer of the breast is inculcated by him, under certain circumstances, though it makes no material difference in the *average* duration of life, because it "seems probable that the course of the more rapid cases is retarded by the operation." In support of this, he adduces two tables, one being made up of cases in which the disease ran its course uninterrupted by operative treatment, and the other of cases in which the cancer was once or more removed by operation: in both the average duration of life was something more than forty-nine months. While the two tables thus closely correspond, "it may yet be noticed," Mr. Paget observes, "that the proportion of those who die within two years is 36 per cent. of those in whom the disease is allowed to run its course, and only 24 per cent. of those from which the growth is once or more removed."[1] To gain an advantage, which is only appreciable by a close inspection and comparison of cases, the removal of the diseased breast is here recommended, though it be admitted by Mr. Paget that the operation is by no means unattended with immediate risk of life, for we are told by him that in 235 operations for cancerous and other diseased breasts, he finds 23 deaths, or a mortality of 10 per cent.

[1] Op. cit.

I am not finding fault with the canon of surgery expounded by Mr. Paget, but I may be allowed to insist that surgeons, to be consistent, must materially modify their views of ovariotomy, if they do not receive it into open communion with other capital operations of surgery. How stands the comparison between the excision of cancerous breasts and cystic degenerations of the ovary? The legitimate operation *appreciably* prolongs life, but it never yet, in a solitary instance, effected a radical cure of the disease for which it was performed; it, therefore, merits the suffrages of the surgical profession. The illegitimate operation *indefinitely* prolongs life, and has accomplished numerous radical cures of the disease which it sought to extirpate; it has, therefore, received the unmeasured denunciation of the surgical fraternity. If the excision of cancerous breasts be justifiable at an expense of 10 per cent. mortality, for the sake of adding a few days to a doomed life, why should not the excision of cystic ovaries be justifiable, at an expense of $26\frac{1}{2}$ per cent., for the sake of giving indefinite extension to life otherwise equally fated? for, according to our statistics, there is a remarkable coincidence between the duration of life in the two classes of cases, when they are permitted to run their courses unmolested.

6th. *The disease may terminate spontaneously.*—Ay, and so may any other surgical disease; yet these instances, in cases of cystic disease of the ovary, are confessedly rare—far too rare to justify any *methodus medendi* founded upon the expectation of their occurrence. As well might the accoucheur defer to deliver by turning in a case of shoulder presentation, because spontaneous evolution may take place, or the surgeon postpone an operation, in strangulated hernia, because spontaneous reduction may happen, as the surgeon-accoucheur refrain from a resort to extirpation of far advanced cystic degeneration of the ovary, because nature may chance to get quit of it by her unaided resources. When such a fortunate termination does occur, it takes place either by the bursting of the cyst, and the escape of its contents into the peritoneal cavity, where it may be absorbed, or by the formation of adhesions to the bowel, uterus, bladder, or parietes of the abdomen, and the establishment of an opening by ulceration through which the cyst may be discharged. But it is obvious that such an effort of the *vis chirurgica* can avail only in cases of unilocular cysts, for the multilocular cannot be evacuated through a single aperture.

I have now finished the defence of ovariotomy against the objections that have been opposed to it; with what success I leave you to judge. I cannot, however, dismiss the subject without entering my reclamation in favour of the late Dr. Ephraim McDowell, of Danville, Ky., as its original inventor, whose acquaintance I had the honour to make, just after my graduation in medicine. This task, exacted alike by justice and a sentiment of pride, kindled by the contemplation of all that is laudable and useful, pertaining to my native State, has been made easy by the labours of my friend and former colleague, Prof. Samuel D. Gross. As Chairman of the

Committee on Improvements in Surgery, appointed by the Kentucky State Medical Society, Dr. Gross presented to the annual meeting, in October, 1852, a report on Kentucky surgery in its entire range, which was published in the Transactions of the society. The nature of the duties assigned him led Dr. Gross to glean from every available source all the information that could be collected touching the acts of Kentucky surgeons, and to mark the improvements and innovations which they were instrumental in introducing. Tracing the history of ovariotomy from the first operation performed within our borders by Dr. Ephraim McDowell, in December, 1809, down to our own day, and then remounting to the primitive case, and searching the records of surgery of other countries, Prof. Gross soon satisfied himself that Dr. McDowell's operation is not only the first of the kind performed in Kentucky, but in all the world besides. Dr. McDowell was not eager to blazon his deeds, and hence it was not until he had performed the operation in three cases that any account of them was published, seven or eight years subsequently to the date of his first operation. Copies of this account in manuscript were sent to a few of his friends, and I well remember that Dr. William Richardson, Professor of Midwifery in Transylvania University, possessed one of them, which he was wont to read to his class. Another copy was forwarded to the celebrated John Bell, of Edinburgh, for whom Dr. McDowell had conceived an ardent admiration, while listening to his eloquent lectures in the famous university of that ancient and renowned seat of learning. The document fell into the hands of Mr. Lizars, on account of Mr. Bell's absence from home. Inspired by Dr. Mc Dowell's novel enterprise and its astonishing success, Mr. Lizars attempted the operation in 1823, but was foiled by the very material fact that after he had made the abdominal section, there was no tumour, ovarian or other, to extirpate. The future diagnoses of this eminent gentleman were more accurate, and his operations more successful.

The single point, however, to which I wish to confine my historical remarks, is that Mr. Lizars is unquestionably the first *transatlantic* surgeon who performed the operation of ovariotomy, in any technical and proper signification of the term. To L'Aumonier, of Rouen, is generally awarded the credit of first extirpating a diseased ovary, and his name is generally placed at the head of the list of operators in tables of ovariotomy. But the French surgeon only opened an abscess of the ovary consequent to parturition, and is no more entitled to the credit of originating ovariotomy than he would have been had he lanced an abscess of the mammary gland. In relation to the two other names that intervene between those of L'Aumonier and Dr. McDowell, in the tables alluded to, namely, Professors Dzondi and Galenzowski, Dr. Gross has shown, ludicrously enough, that the patient of the former was a lad, Christopher Shultz by name, who had a circumscribed tumour as large as his head in the hypogastric region; and a cure was effected by drawing out the cyst piecemeal through an incision

in the wall of the abdomen, with a pair of broad forceps. Galenzowski's was a case of multilocular cysts, but extirpation was not practised: the tumour was opened, the cells torn up, the mass fixed by ligature to the wound, and a perfect cure obtained, according to the synoptical account given by Dr. Atlee in his excellent table; but, according to Dr. Gross, the operation was performed in March, 1827, eighteen years after Dr. McDowell's first case, and four years after Mr. Lizars' first case.

From the facts and dates just referred to, we are not permitted to doubt that to Dr. Ephraim McDowell is justly due the imperishable honour of conceiving, maturing, and triumphantly executing the ablation of diseased ovaria by a bold invasion of their sanctuary, even the cavity of the peritoneum, which had been held inviolable by all former surgeons, and from which so many continue to shrink with dismay. Gastrotomy, in the fashion of the major incision, had never before been ventured upon, except with a view of rescuing the fœtus from entombment in its mother's womb, and the mother herself from the dangers of instrumental delivery *per vias naturales*, in cases of difficult parturition. And if a portion of the immortality of even Cæsar's name is due to its association with obstetric gastrotomy, it is not surely too much to say that the name of McDowell will live as long as ovariotomy is practised, and as there are grateful women to enshrine it in their hearts.

P. S. Since the reading of this paper, I have been informed by Dr. Middleton Goldsmith, Professor of Surgery in the Kentucky School of Medicine, that he has frequently heard his father say that Dr. Ephraim McDowell was in the practice of administering the tincture of opium to his ovariotomy patients, in very large and repeated doses, after the operation. He gave a teaspoonful for a dose, and repeated it at the usual intervals, until narcotism was induced, which was kept up for a considerable time—how long I am not precisely informed. Dr. Goldsmith, Sr., now of New York, himself an accomplished and successful surgeon, formerly practised his profession in Danville, Ky., and during a part of the time he resided there, he was the partner of Dr. McDowell, whom he assisted in some of the operations in question. He had, therefore, full opportunity of becoming acquainted with the minutest details of the practice of the father of ovariotomy, and I have referred to this salient point in the after-treatment of his patients, because it displays, in a remarkable manner, the sound judgment and great practical sagacity of Dr. McDowell. His object must be supposed to have been to repress peritoneal inflammation, and extinguish it in its very incipiency, by these large doses of opium.

It is doubtful whether at that day, now nearly a half century ago, opium had been recommended, or had recourse to, with such a view, by any practitioner, either in Europe or America; but at this time the practice is steadily gaining ground, and is destined ere long to be universal. To the value of opium as a remedy in peritonitis, the attention of the pro-

fession was first drawn, I believe, by Mr. Bates, of Sudbury, in a pamphlet which I have not seen, but which is referred to in *Braithwaite's Retrospect*, No. V. He recommended opium, both by the mouth and rectum, in the treatment of severe peritonitis. The practice was deemed chiefly valuable in cases where, either from ulceration or injury, perforation of the intestine has taken place, and which have been supposed to be almost universally fatal. Dr. W. Stokes has related some very striking cases, strongly confirmatory of the opinions of Mr. Bates, remarking that in many of these cases the patient sinks with awful rapidity, and no time is allowed to pursue the active treatment which is adopted in other cases. Purgatives, he thinks, would in such cases probably increase the evil, by *tearing asunder* recent adhesions, and thereby preventing nature closing the communications between the mucous and peritoneal cavities. Dr. Watson, the accomplished lecturer on Practice of Medicine, King's College, London, after citing cases from Dr. Stokes, illustrative of the efficacy of large doses of opium, where peritoneal inflammation supervenes upon perforation of the intestine, bursting of hepatic abscess into the peritoneal cavity, etc., earnestly recommends the same mode of treatment, as an auxiliary, where the peritonitis does *not* grow out of previous organic disease; in all cases, in short, of mere peritonitis. In our own country, Prof. A. Clark, of New York, has ably advocated the opium treatment of puerperal peritonitis, and in the reports of ovariotomy cases, in our medical journals, it is plainly discoverable that opium is much more freely given now than formerly, as a prominent part of the after-treatment. This is particularly noticeable in Prof. Van Buren's report of a case of ovariotomy in the *New York Journal of Medicine* for March, 1850. I cannot refrain from quoting the very high, but not extravagant, estimate of opium, expressed by Dr. Van Buren, in the report just cited: "When the remedy is administered freely, but always intelligently, the state of the pupils, the respiration, and, above all, its influence in keeping down pain, being closely watched; I believe that it possesses the power of preventing the development of inflammation as fully as chloroform will prevent the shock of an operation."

There can, I think, be no doubt that nothing has contributed to diminish the mortality attendant upon ovariotomy, more than the free use of opium for several days subsequently to the operation. An attentive examination of the history of individual cases will, I believe, bear out this assertion. In my own cases, I administered the remedy largely during this period. Not having kept a strict account of the quantity, I cannot say precisely how much of the tincture (the preparation which I prefer), Mrs. Ashby took, but it could not have been less than an ounce.

Valuable as opium is as a prophylactic of peritonitis and as an antiphlogistic when the disease begins to be developed, it is not, perhaps, less salutary in its effects by securing perfect quiescence of the bowels for five or six days subsequently to the operation of ovariotomy. I can conceive of

nothing more inopportune or noxious than the operation of purgative medicine within the period specified. The exaggerated peristaltic movements of the alimentary canal, which purging implies, are well calculated to awaken inflammation in the peritoneal membrane, to which a strong predisposition already exists, growing out of all the circumstances that so recently preceded, whilst the requisition made upon the abdominal muscles for their active co-operation, must necessarily interfere with the healing of the external wound, and might probably displace the ligature of the pedicle, giving rise to secondary hemorrhage. The recovery of both of my patients without a single untoward symptom, I am disposed to attribute more to the free use of opium, than to any other means that were employed, not excepting the genial and equable temperature which it was sought to maintain in their chambers.

But I have been wandering from the point. Dr. McDowell, as it appears from Dr. Goldsmith's testimony, was in the habit of giving his ovariotomy patients large doses of laudanum, and it is reasonable to suppose that his practice was designed to secure the ends, and ward off the dangers which we have been considering. If this be so, it exhibits him to us as being far in advance of his contemporaries in therapeutics, as well as in surgery, for they, as a general rule, knew of no other preventive of inflammation than low diet and purging, and no other remedy for the disease, when developed, than bloodletting, in copious effusions. Indeed, at that time, bloodletting was most rampant under the teaching of Dr. Rush, whose fame was then in its zenith, and whose eloquent voice and pen invested the lancet with irresistible charms.

ART. V.—*Notes upon the Effect of Alcohol, Glycerine, Water, Gum, Ammonia, and the Vacuum upon the Exposed Hearts of Frogs, Snapping-Turtles, and Sturgeons.* By S. W. MITCHELL, M.D., Lecturer on Physiology in the Philadelphia Medical Association. (Read before the Academy of Natural Sciences, Biological Department, December 20, 1858. Recommended for publication Feb. 22, 1859.)

IT is a matter of some interest as connected with the subject of the cause of the rhythmical action of the heart, to ascertain the effect of a vacuum upon its movements. At one time it was alleged that the contact of the air with the exposed heart was the stimulus which, under these circumstances, sustained its action. The simple experiment of placing the organ in vacuo to test the validity of this opinion was resorted to at various periods by Caldani, Wernlein, Kurschner, and John Reid, all of whom observed that the hearts of animals continued to pulsate in vacuo. On the

other hand, Tiedemann, Fontana, and Dr. T. H. Bache and myself, found that the heart in vacuo always fell off in activity, and, in most cases, when the exhaustion was complete, ceased to pulsate.

In certain experiments made by Dr. Bache and myself we found, as just stated, that the hearts of frogs and snappers always became less active in vacuo. Not all of these hearts, however, could be made to stop suddenly when a rapid vacuum was effected, and some continued to pulsate in vacuo for upwards of half an hour. Since, however, the frog heart will pulsate in the air for many hours when suspended, and not disturbed, the effect of the vacuum becomes in all cases sufficiently plain. Thus, when the heart of a snapper, beating in the air fourteen times per minute, was suspended in vacuo, the pulse fell to four per minute, and so continued during twelve successive minutes, acting, however, very laboriously, a single pulsation occupying as much as ten seconds.

On readmitting the air, the pulsations rose at once to nine per minute, and on applying moisture in the form of blood, to eleven per minute. This heart remaining in the air ceased to pulsate at the end of an hour and eight minutes. The single experiment just stated illustrates well enough what usually took place when either frog or turtle hearts were thus treated. The number of pulses always lessened. Sometimes the heart stopped suddenly, beating anew when the air was let in on it, and in all cases exposure in vacuo, even for a time, shortened the length of the period during which the heart ordinarily continues to pulsate. I repeated these experiments in 1854, with like results, and was disposed to conclude that the mere absence of air certainly lessened the activity of the exposed heart. Observing, however, the laboured nature of each pulsation, as well as the swollen and distorted appearance of the heart in vacuo, it appeared to me that other elements were affecting the heart besides the mere absence of aërial stimulus. In despite of every precaution the exhaustion causes bubbles of air to appear under the pericardial surface, and evidently has a great mechanical effect upon the organ, producing blotches and dark stains, as of effused blood, upon the surface of the heart.

To learn, therefore, whether the effect is due only to the absence of atmospheric air, or in part to other causes, I suspended the hearts of several frogs and snappers in bland fluids, as oil, glycerine, and water at various temperatures.

Experiment.—The heart of a large turtle (wt. 12 lbs.) was removed with care. Suspended in air it beat, during four consecutive minutes, thus, $5\frac{1}{2}$, 8, 8, 8. In vacuo, as complete as it could be made with a not very perfect pump which had no gauge, it beat, per minute, 3, 2, 3, 2, 2, 2, 1, 1, 1. The air being let in it rose to 3, 6, $7\frac{1}{2}$, 7, 7, 7. Without moving the heart, a small glass of water, at 66°, was carried up from below, so that the suspended heart rested in it; or, as in this case, being weighed down by a half bullet, sunk below the surface. The heart instantly began to beat, strongly at first, and then feebly, its movements becoming more numerous, as thus:

1st m. 9; 2d m. 11; 3d m. 14; 4th m. 14; 5th m. 21, and very feeble. Two minutes elapsed without further movements, until being removed to the air it beat 11 the 1st minute, when the heart was placed in water at 113° F. Its pulse rose at once to 44, 1st minute, and 60, the 2d minute; then beat convulsively, and suddenly ceased. In air it again pulsated after several minutes, beating 5 regularly. The water at 113° F. again partially renewed its motions, which, however, were only 8 per minute, and altogether auricular, continuing through but four successive minutes.

Similar results attended nine experiments upon the effect of water at the temperature of the air, and at 113° F. In every case the water at aërial temperature quickened, and at last enfeebled and checked the heart's action. Water at 113° F. enormously accelerated the heart's movement, instantly sending it up to 20, 30, or even 88 to 120 pulses per minute, and always more or less convulsing its action. It is worthy of notice that, whether the heart be checked by hot or cold water, it is still susceptible of being restimulated by suspension in alcohol or by mechanical irritants.

I have made no similar experiments with mammalian hearts, but I have obtained precisely the same results with the large heart of the sturgeon, as is illustrated in the following experiment:—

Experiment.—The heart of a sturgeon, nearly five feet long, was removed as rapidly as possible, and allowed to expel all the blood from its cavities. It was then suspended in water at 70° F., the temperature of the air. After extraction it beat 33 per m. The water almost immediately accelerated its rate to 60 in the half minute, when it suddenly ceased to beat. Removed from the water and inflated with air it as suddenly began to act again at the close of twenty minutes. The air was then let out, and the heart plunged anew in water at 113° F. Several rapid pulses took place, and it ceased instantly. The effect of alcohol was not essayed.

From these experiments the power of water to stimulate the heart in certain animals is very well seen. The practical physician will at once be reminded of the stimulant effects of a too watery blood upon the human organ.

The action of an elevated temperature upon the heart is also of some interest.

The most important deduction, however, is the constant fact, that when the heart ceases to respond to one stimulus it may still be alive to others. This was further developed in very numerous experiments upon the effect of carbonic acid, nitrogen, ether vapour, and the vacuum, on the heart. Thus, the heart which ceased to act in vacuo again pulsated in air or water, and, having ceased to act in water, was still awake to the stimulus of alcohol. Even after this the muscular fibres, and sometimes the whole auricle, could be restimulated by the knife or a sharp tap. After stimulation by ammonia the heart could not be excited by any irritant. This fact, as well as the directly stimulating power of ammonia on the heart, are well seen in the following experiment:—

Experiment.—Temperature of air 70° F. A frog's heart beating steadily 27 per minute, was suspended over strong ammonia water. The organ instantly multiplied its pulsations, and, during six successive minutes, performed as follows: 44, 28, 32, 58, 36, 34, and suddenly ceased to act. Alcohol and mechanical means alike failed to re-excite its movement.

It was clear from the experiments stated that water at all temperatures affected the heart. My ultimate object was to make for the heart a practical vacuum by plunging it in a fluid which should not disturb it mechanically, and should simply shut out the air, and itself exert no stimulant influence. As pure water did not fulfil these ends I resorted to a solution of gum Arabic in water, sp. gr. 1.036.

Experiment.—The heart of the frog used in this experiment beat when taken out but nine in the minute. In fact, the hearts of frogs beat so differently as to number that it is always necessary to wait until the beat becomes regular through several successive minutes. The heart in question was plunged in a solution of gum, 1.036, temp. 70° F. It continued to pulsate nine times per minute during twelve successive minutes. A second heart furnished a result very nearly similar, the heart making fourteen beats in air and seventeen in gum water.

Pure glycerine was found, quite unexpectedly, to exert a depressing effect upon the heart. The results obtained may be briefly stated as follows:—

Experiment.—The heart of a frog in air, temperature 72° F., beat in successive minutes 36, 34, 30, 32; in glycerine 10, 14, 14, 13, 14, 14, and so continued to act unchanged for one hour, when it ceased to move. In a second experiment the heart beat unchanged in glycerine, but ceased to act at the close of seventy-eight minutes. Like results were observed in four similar experiments, so that the first one stated must be regarded as exceptional.

Glycerine, at a temperature of 100° F., acted as follows: A frog heart in air, at 71° F., settled to a regular pulse of thirty-four per minute. In glycerine, at 100° F., it beat in successive minutes 40, 52, 55, and ceased to act at the close of three minutes.

Glycerine at 32° F. rapidly depressed the heart's action. A heart beating forty in air at 70° F., fell at once in glycerine at 32° F. to 22, 21, 14, 14, 6, in successive minutes, and then stopped permanently. Several other experiments gave the same result, the heart rarely acting longer than five minutes.

Of all the agents used, olive oil gave the best results.

A frog heart, beating nineteen per minute at 72° F. in air, was suspended in neutral olive oil at 72° F. It underwent no change as to number or force for two hours, when it beat more feebly, and ceased to act in three hours and twelve minutes. In two additional experiments the heart gained one or two pulses per minute in the oil, continuing in one case for one hour and four minutes, in another for four hours and a half. Olive oil at 32° F. enfeebled the action, but did not affect the number of pulses, which could be readily observed during twenty minutes, when they ceased abruptly.

The effect of olive oil at aërial temperature was most admirably shown in the following experiment, which was designed to imitate closely the mechanical conditions existent during life, and, at the same time, to cut off from the heart the stimulus of the air.

Experiment.—The heart of a large sturgeon was rapidly removed at 8.30 A. M. As very often happens, it did not pulsate until it was hung up and inflated by means of a tube tied in the mouth of the auricle, the bronchial vein being closed by a tube having a stopcock, and bent at an acute angle three and a half inches above the bulbus arteriosus. After the heart had acquired a pretty steady pulse of thirty-four per minute, a funnel with a tube six inches long was fitted tightly in the mouth of the auricle, the tube used for inflation being removed. About half way down the stem the funnel was made narrow, so that oil placed in the funnel would not descend too rapidly into the auricle. The heart beat less regularly as the air was allowed to escape; but, upon being slowly and carefully filled with oil by means of the funnel fitted in the auricular opening, the heart regained its regular pulse, the number rising to 33, 34, 36, and, finally, settling to 33 per minute, with some irregularities to which the extracted heart of the sturgeon is usually liable. The heart was next placed in oil, and weighed down below the surface by a piece of lead attached to the apex of the heart by means of a piece of silk and a fine cambric needle. Thus situated, the heart was isolated from the air, while the oil being supplied through the auricular funnel was driven through the organ, up the arterial bulb, and, finally, over the bend in the pipe, which allowed it to escape. Under these circumstances the pulsations slowly rose in twelve minutes to thirty-seven per minute, when they began to fall, and in one hour were but twenty-one to the minute. With now and then a pause of many minutes, the pulses continued for an hour longer. At this time I was obliged to leave, and, therefore, replaced the funnel with a short open tube, plunged its upper orifice below the surface of the oil, and turned the mouth of the escape-tube into the vessel in which the heart was balanced. The organ was thus enabled to feed itself. On my returning in two hours, the auricle alone was beating. Its pulsations could still be seen one hour and eighteen minutes later, their number being reduced to twelve per minute. Other occupations prevented me from carrying the observations further. At this time, the pulsations being feeble and auricular only, had lasted for some five and a half hours, and could hardly have endured at the utmost more than two hours longer. The heart of a second sturgeon removed an hour after the first one had been placed in oil, when inflated in the air, pulsated irregularly about forty per minute during eight hours, and more irregularly, and finally, in the auricle alone during nine hours longer. It is probable, therefore, that complete isolation from the air, although at first it did not alter the number of pulses, lessened their ultimate duration.

These experiments seem to justify the following conclusions:—

1st. That the hearts of the frog and turtle beat much less rapidly in vacuo, and sometimes cease to act until the air is readmitted. That the vacuum most probably retards the heart's action by the mechanical effects it induces as well as by depriving it of oxygen, since the beat in vacuo is long and laboured and the accelerating influence of the readmitted atmosphere is almost instantaneous.

2d. That mere isolation from the air, as by placing the heart in oil, does not alter the rate of the heart's movements for some time, but lessens their ultimate duration.

3d. That water at aërial temperatures stimulates the heart, and very soon causes it to cease to pulsate. That water at higher temperatures, as 100° F. to 113° F., produces much more rapidly the same results.

4th. That glycerine at aërial temperatures affects the heart but little except as shortening the time during which it continues to pulsate. That glycerine, at 32° F., depresses the heart's action, lessening the number of pulses per minute at least one-half, and soon checking its movements altogether.

5th. That olive oil at 32° F. affected the heart very little at first as to the number of beats per minute, but soon rendered them feeble, and finally stopped them, though at the close of a longer interval than was required by glycerine at the same temperature.[1]

6th. That when the heart has ceased to respond to one stimulus, however violent, it will usually remain sensitive to others apparently far less powerful.

ART. VI.—*Observations on the Colourless Blood-corpuscle.* By WILLIAM A. HAMMOND, M. D., Assistant Surgeon U. S. Army. (Read before the Academy of Natural Sciences of Philadelphia, Biological Department, February 7th, 1859. Recommended for publication, February 21st, 1859.)

THE white blood-corpuscle, whether we regard it as the first or intermediate stage in the development of the red disk, or admit that we are unable to designate its uses, is entitled to far more consideration from physiologists than has, until recently, been awarded to it. Of late, however, through the researches of Wharton Jones, Virchow, Bennett, and others, it has attracted more particularly the attention of biologists, and perhaps ere long we may be enabled to understand its use in the economy.

The object of the present paper is to aid somewhat in the elucidation of one or two points of interest connected with this body, the principal of which relates to its persistence in its normal form in dried blood.

At the last meeting of the Department it will be recollected that in answer to an inquiry by my friend Dr. Woodward, I stated I had been unable

[1] The glycerine was thinner than the English glycerine (Price's) now in use, and altogether was a much less reliable article. For this reason I do not entirely trust the results observed when using glycerine.

to detect the white globule in blood dried on a glass slide, and that I did not believe it would remain intact under such circumstances.

It is, however, necessary that I should modify this opinion, as I have frequently since perceived these corpuscles, perfectly unaltered in blood which had been dried in the manner above stated. This has been more especially the case in the blood of reptiles, the corpuscles of which, however, both white and red, differ in many essential points from those of the mammalia.

Human blood, when dried upon glass or other hard substance, seldom retains its white corpuscles intact for any length of time. If exposed to the atmosphere for a few hours they break up, and can only be recognized by the remains of their walls. There are, however, bodies to be perceived in dried human blood which can with difficulty be distinguished, at first sight, from the dry, white corpuscle, except by the circumstance that they are of no uniform size. I have always regarded them as consisting of fat, and have recently ascertained that they are perfectly soluble in ether. A fact which may readily lead to the supposition that they are the white corpuscles is, that they are distinctly granular, and present, many of them, the appearance of containing a well-defined nucleus.

That they are really not such can be proven conclusively by mixing a little alcohol or ether with blood, and filtering off the supernatant fluid. A drop of this latter placed upon a glass slide, and allowed to evaporate, deposits numbers of these granular, fatty globules, most of them about the size of the white corpuscle. They are readily soluble again in the ether or alcohol, and to an experienced eye present other points of difference from the colourless corpuscle. Nevertheless a hasty examination, or a want of familiarity with the subject, might easily lead to the inference that they were veritable, colourless blood-corpuscles.

It is asserted by Robin, and recently reiterated by Flemings,[1] that the human white corpuscle is completely broken up in the act of the blood drying. Wyman, however, denies that any such disintegration occurs, and asserts that the colourless corpuscle is even more persistent than the red.

From my own observations I am satisfied that the red corpuscle will, under similar circumstances, remain much longer intact than the white. As above stated, I have never found the latter to remain in blood dried on glass, and exposed to the atmosphere, more than a few hours, whereas no difficulty is experienced in keeping the red disk, under such conditions, for several years.

With a view, however, still further to elucidate the subject, I soaked small pieces of cotton cloth in human blood, and examined them at different periods afterwards, as follows.

At the end of twenty-four hours I washed out one of the pieces with the

[1] American Journal of the Medical Sciences, January, 1859, p. 84.

filtered serum of frog's blood. Upon inspection with the microscope, the white corpuscles were generally perceived unaltered; a few were broken up. The red disks were contracted, but regained their ordinary size and form after floating a few minutes in the serum.

At the end of forty-eight hours a few white corpuscles were still found unbroken. The majority, however, were disintegrated, but the remains of their walls were still to be seen. The red corpuscles, as before, regained their normal form by endosmosis.

After seventy-two hours had expired the white corpuscles had entirely undergone disintegration, but the red disks still remained intact.

At the end of fifteen days the red corpuscles regained their ordinary size after maceration in the serum, but no trace of the white corpuscles could be found, beyond a few irregular fragments, which were probably the remains of the cell walls.

These experiments were repeated with several specimens of human blood, and that of other mammals, with similar results. From them it is seen that the white corpuscle did not retain its normal form after the third day, but became broken up into fragments, the contents of course escaping.

In human blood, dried in a thin film and covered immediately with thin glass, to the edges of which a cement impervious to air and moisture has been applied, the white corpuscle remains in a state of integrity for a considerable period; how long I am not prepared to say at present. Certainly, however, for at least fifteen days.

As an evidence of the presence of blood, the white corpuscle cannot be regarded as affording as valuable indications as the red. As a means of discriminating between the different kinds of blood nothing of importance has yet been done to warrant our expressing a definite opinion of its value. It is not, however, probable that much can be claimed for it in this respect. Its form being the same in all animals, would require us to rely entirely on its size, which does not vary greatly among the mammalia, probably not even to the same extent as the red corpuscle. In reptiles, birds, and fish, it is much larger than in mammals, but here the form of the red corpuscle furnishes much more valuable indications.

ART. VII.—*Cases of Gangrene of the Lungs treated in the New York Hospital from January*, 1857, *to September*, 1858. Reported by B. DARRACH, M. D., Resident Physician.

CASE I. *Gangrene of the Lung preceded by a sense of Stuffing in the side, Pain, and Paroxysmal Cough; Hæmoptysis. Discharged without relief.*—James Foster, aged 33, native of Ireland, country storekeeper, resident of Pennsylvania, was admitted into the New York Hospital, July 7th,

1858, and placed under the care of Dr. John H. Griscom. Always had enjoyed robust health; never had any serious illness until the present attack. No hereditary tendency to disease or constitutional taint discoverable; temperate; habits regular.

About the beginning of last December, while at his business and enjoying ordinary health, he was seized with a feeling as if something was stuffed in the left chest, and a soreness over a spot about the size of his hand around and to the outside of the nipple. He kept about for a week, but was finally obliged to go to bed. He then had a hard, dry, paroxysmal cough. From this time he rapidly failed in strength, until some time early in the spring; then his life was despaired of. About the middle of February, after a paroxysm of coughing, he suddenly expectorated a large quantity of very offensive matter, having an exceedingly disagreeable taste, and of a dirty ash colour. He says he could feel it coming from a point corresponding to the cartilage of the sixth rib. This continued for a week, and then gradually grew less in quantity, and lost its offensive odour. He has had several attacks of hæmoptysis since (once to the amount of a pint); which generally followed a period of more than usual exertion, and were always preceded by an increase of expectoration and of the gangrenous odour. Since March, he has gradually gained strength, and is now able to go about. He still suffers from the cough, and has a muco-purulent expectoration. His limbs are slightly œdematous; hands emaciated; tissues, about the ankles, wrists, and fingers, thickened; fingers clubbed; nails strongly curved. Complains of soreness and stiffness of the joints, with some tenderness. Has a sense of soreness about the left nipple, and still the feeling of something stuffed in there. Anteriorly, the left chest is resonant on percussion, as low as the fourth rib, but very flat below that point to the seventh. Behind, percussion is dull as high up as the centre of the scapula, and laterally to the same level. Respiratory murmur over the upper part of the left and all of the right lung natural. Loud bronchial respiration over the dull portion behind. Pulse 100, of good volume and fair strength. No evidence of disease of the heart or arteries. Appetite tolerable; tongue clean; constipation. Urine highly coloured and loaded with urates. Ordered—tr. cinchon. co. ℥j, three times a day; Labarraque's sol. chlor. sodæ, ℥ss every four hours. Expectorants as may be required. Generous diet, with an allowance of porter or wine, as preferred.

July 12. His expectoration began to have the peculiar offensive smell of new mortar, so characteristic of the disease, on the second day after admission; it is now very much increased in quantity and offensiveness; amounts to about a pint and a half in twenty-four hours; is of a dull grayish colour, sometimes with a pink tinge, frothy, and disposed to be flocculent; has a very disagreeable taste to the patient; his cough is paroxysmal, reiterated, and very distressing; percussion of the chest elicits nothing new; bronchial respiration has been succeeded by a total absence of respiratory sounds and vocal fremitus over all the dull portion, with an equivocal ægophony. Other symptoms unchanged.

17*th*. Ordered—inhalations of turpentine in addition to his other remedies.

August 2. Thinks his cough relieved by the inhalation; had a slight hæmoptysis last night; expectoration more offensive.

6*th*. Dr. H. D. Bulkley in charge. No trace of ægophony. Feels less comfortable. Ordered—ol. morrhuæ ℥ss, syr. ferri superphosphatis ℥j, three times a day, in place of tr. cinchona. Blister to the side.

13*th*. Marked dulness over the whole left chest, posteriorly, and also in

front, increasing from the apex downward. There is a feeble respiratory murmur as low as the seventh rib behind, and to the fourth in front; but none below that. Along the posterior border of the scapula the inspiration is very feeble, with a bronchial expiration. Over the sixth rib it becomes cavernous, with pectoriloquy. Vocal resonance on that side increased; vocal fremitus diminished, and entirely absent below; marked tenderness on percussion of that side; motion of inspiration also less than the other side; over the right lung respiration is natural; expectoration unchanged. Respirations 34; pulse 108, full, after the examination of his chest. Can perceive no difference in his other symptoms. Wished to go home, and was discharged.

CASE II. *Gangrene of the Right Lung; Cough and Pain for a year before; Paroxysms of Dyspnœa, and Cough; Gangrenous Expectoration; Recovery.*—Albert Byard, aged 39, native of New York, seaman, admitted into the New York Hospital December 24th, 1850. Placed under the care of Dr. Joseph M. Smith, but was transferred to the care of Dr. Thos. F. Cock, on the first of January following. Hereditary and previous history not obtained. Eleven months ago, while on board a United States man-of-war, in the Mediterranean, he was taken with a severe pain in his right side, and a cough. Expectoration often streaked with blood; once he raised a quantity of pure blood. Since then the pain has left him, though the cough continued. He has never been able to do duty since. Six weeks ago he began to be troubled with severe paroxysms of dyspnœa, liable to be excited by the least exertion. Eleven days ago his pain returned, after exposure to wet, and was aggravated by cough and a full inspiration.

Present condition. Has the appearance of ordinary health. Complains of the severe paroxysms of coughing. These come on irregularly; last a considerable length of time, causing profuse sweats and urgent dyspnœa, for which the patient often gets out upon the floor, in hope of relief. Expectoration moderate in quantity, frothy, and muco-purulent. Says that powdered gum Arabic has always given him the most relief. Pulse 86, and moderately full. Tongue furred and slightly red. Anorexia and great thirst.

Auscultation and percussion reveal no distinct physical signs.

Ordered—a stimulating expectorant, and gum Arabic.

January 4. On examination of the chest to-day was found dulness on percussion, posteriorly, over the right lung, and a loose mucous rale, apparently deep-seated in the chest, and extending as high as the lower angle of the scapula.

5*th*. Had an unusually severe paroxysm of coughing last night, which was relieved by the sudden expectoration of a large quantity of a diffluent, frothy, dirty grayish, and extremely offensive sputum, having the characteristic new mortar odour of gangrenous lung. His breath also has the same odour; he also tastes it. General symptoms unchanged. Ordered—Labarraque's sol. chlor. sodæ ℥ss, every four hours.

9*th*. Pulse 80, and feeble; cough about the same, losing strength.

12*th*. Distinct mucous rale at the base of the right lung, posteriorly, with feeble respiratory murmur. Ordered—stimulants.

20*th*. Visible improvement since last note. Tongue, which was before dry and striped, is now more natural; pulse has more fulness and strength; dyspnœa but slight; tendency to constipation relieved by enema; appetite no better, and very poor. Expectoration less copious, more mucous, more diffluent, and less offensive. Respiratory sound audible over the right side

22*d*. Severe coughing fit last night; but expectoration less, and not near so offensive. Appetite better; pulse more force, and tongue more natural in appearance.

30*th*. Has steadily improved since last note. Appetite better; tongue clean; no dyspnœa; pulse more volume and strength; expectoration small in quantity, and without fetor.

February 4. Now slight dulness over the right chest behind; respiratory sounds feeble and prolonged. Left chest percussion natural, respiration puerile.

March 25. Patient now assists in the duties of the ward. No expectoration, and but little cough.

April 17. Feels well, but has not yet gained his full strength. Discharged cured; but remained under observation some weeks longer, and steadily gained strength.

CASE III. *Gangrene of the Lung; Recovery.*—Jacob Mitchell, aged 35, native of New Jersey, seaman, admitted to the New York Hospital, March 16th, 1857, under the care of Dr. Thos. F. Cock. No previous history of the patient obtained. Was taken with a cold three weeks ago, from which he soon recovered, excepting the cough. This in a short time was accompanied by a fetid purulent expectoration. The cough was most frequent at night, in paroxysms, causing great distress, and preventing sleep. He has also had attacks of hæmoptysis daily, or every other day, for some time past. Is somewhat emaciated; appearance dull, with a yellow, dusky hue of the face. Intelligence perfect. Pulse 78, full, but very compressible. Appetite poor; tongue coated; bowels inclined to constipation. Percussion dull below the right clavicle; no perceptible difference behind. Still complains of the cough; sputa frothy, of a dirty grayish colour, and very offensive odour. Ordered—Labarraque's sol. chl. sodæ ʒss, *ter in die*, ol. morrhuæ. Generous diet and stimulants.

April 25. Fine, deep-seated crepitus noted over the posterior part of the right chest.

August 26. Has had numerous attacks of hæmoptysis since last note. The patient at one time became very low, and required the free use of brandy. His expectoration has varied somewhat in quantity and odour; it is now very much diminished and has lost its fetor. The pain in the side noted June 6th, for the first time, has also disappeared. His appetite and strength have very materially improved. Chlor. sodæ suspended.

September 3. Slight increase of sputa, with a slight gangrenous taste. Some pain in the side. Chlor. sodæ resumed.

24*th*. Has occasional cough and expectoration. The right side is markedly flattened anteriorly, and dull upon percussion throughout. The shoulder is depressed and the expansion of this side much less than that of the left. Respiratory murmur very feeble; left side clear. Feels much better, and quite strong. Discharged.

Two other cases occurred in the hospital the same winter.

One, had the characteristic cough and sputa, but was able to go about the whole time. Recovered.

The other was admitted for supposed malaria cachexia. Could give no history of himself. After lingering for about six weeks, he died. On *post-mortem* examination a large cavity was found in the lower lobe of the left lung, surrounded by indurated gangrenous walls. There was also fatty degeneration of his kidneys.

ART. VIII.—*Case of Fracture at Base of Cranium, with discharge from external ear of a portion of the substance of the brain, of watery matter, and of blood in large quantities; Recovery.* By JOHN A. LOCKWOOD, M. D., Surgeon U. S. Navy. (Communicated by W. Whelan, M. D., Chief Bureau Med. and Surg. U. S. N.)

JOHN SMITH, third ordinary seaman, aged 30, on the 19th September, 1855, on board the U. S. ship Constellation, at sea, fell from the spar to the main deck, down the fore-hatchway, striking plumply upon the crown of the head. When examined, there existed insensibility, a very feeble pulse, foaming at the mouth, stertorous breathing, copious flow of blood from right ear, and hence from the nose. Three hours subsequently the pulse had rallied; he was capable of being aroused; no epistaxis; bleeding from ear diminished; a small quantity of brain had come away with the blood from right ear. The amount of blood which escaped from the ear during the first hours was very considerable, estimated at fifty or sixty ounces. Cut cups depressed the pulse; a stimulating injection was retained for several hours, acting freely when consciousness was restored. During the night discharge of blood and serum continuous, and comparatively moderate. Reposed quietly.

September 20. Inclined to be comatose; aroused with some difficulty. Moderate discharge of serum or watery matter, coloured with blood. Small particles of brain taken from the meatus, and carefully examined by Assistant Surgeon Wyatt M. Brown and myself.

21*st*. Disposed to sleep. When not asleep, restless, and wishes to walk about; wants his grog; no lack of muscular power; mind wandering; complains at times of pain in head; pulse natural; coloured discharge as before.

22*d*. Intellect clearer; more headache; discharge continuous, but no longer discoloured.

23*d*. Mind quite clear; during night renewed discharge of blood from ear and nose.

24*th*. Violent pain across the forehead; watery discharge.

25*th*. Severe suffering from headache during the night; this morning succeeded by a sense of fulness; watery discharge as before.

26*th*. Less pain; sense of fulness instead; watery discharge as before.

October 23. Returned to duty. Still complains of a ringing in the ears, and a sensation described as a "stoppage in the head." He is quite robust, and otherwise in good health. The watery discharge from the ear did not entirely cease for nearly a month. At one time it was sufficiently copious to wet disagreeably during sleep his pillow, and necessitated plugging the

orifice of the ear before going to bed. For a short period the discharge was yellowish, and of an offensive odour, probably from an internal abscess.

Agreeably to Smith's own statement, he had been epileptic since 1850. He had experienced two attacks since joining the ship, seven weeks before the accident, and it was on the incursion of a third that he fell through the hatchway. After the injury, he escaped with a single fit during the succeeding three months. The following spring, he was discharged the navy, and I have not been able to trace his further history.

The diagnosis in this case I regard as unmistakable. The very copious flow of blood from the ear, the discharge by the same outlet of watery matter, and of a portion of the substance of the brain itself, proves that a fracture of the skull at its base (produced by a *contre-coup*, when the full force of the fall was sustained by the vertex), had involved the petrous portion of the temporal bone.

Surgical writers are agreed in ascribing the gravest prognosis to this injury, when accompanied by a watery discharge. (RANKING'S *Abstract*, vols. ii. and iii.) Robert, one of the authorities on this subject, declares it to be a fatal symptom. Ericson mentions a single case of recovery. I am not aware of any such result being on record, where a portion of the substance of the brain escaped by the external ear.

ART. IX.—*Modified Extension Apparatus for Fractures of the Leg.*[1] By ALONZO CHAPIN, M. D., Member of the Massachusetts Medical Society.

SOME fifteen years ago I was called to attend a man in the country, who had fallen with a scaffolding and broken both bones of the leg—the tibia and fibula. The fracture of both was oblique, and the management required a considerable extending force to bring the bones into coaptation, and to keep them there. The man was irritable, too, and impatient and troublesome to control. As is often the case with country practitioners, it was necessary to extemporize an arrangement which would suit the case. Desault's extension splint did not suit me for a model. The counter-extending force being dependent on a single perineal strap, gives an oblique inclination to the pelvis, does not act in a line of the axis of the limb, allows of more rotary motion of the foot than is sometimes admissible or

[1] This apparatus was exhibited to the members of the Middlesex East Medical Society at its meeting in March, 1858, and afterwards presented to the consideration of the Fellows of the Massachusetts Medical Society at its annual meeting held in Boston in the month of May following.

comfortable, and furnishes inadequate facilities for producing and keeping up the exact amount of extension needed.

The modification by Dr. Physick, in extending the splint to the axilla, though diminishing some and removing other objectionable features of Desault's apparatus, seemed to me to possess an additional and somewhat serious objection in the confined and constrained position which it must exact of the patient's body.

The apparatus contrived by Dr. J. F. Flagg, of Boston, suited me better. It is quite a different modification of Desault's splint, was described by him in the *New England Journal of Medicine and Surgery*, for January, 1821, and was afterwards copied into Sir Astley Cooper's *Treatise on Dislocations and Fractures of the Joints*, the edition published in 1844, by order of the Massachusetts Medical Society, at page 196. It has been in use in the Massachusetts General Hospital for a good many years. It consists, in addition to the single outside splint of Desault, of a second shorter, placed along the inside of the leg, its upper end well cushioned and resting in the perineum, and extending to the same distance below the foot as the outer splint. Both splints also pass through mortises in a cross-piece some six or seven inches apart. This cross-piece may thus be moved up or down, to suit occasion, and is kept in place by pegs stuck through the splints. "A wood screw passes through the centre of the cross-piece, on the upper end of which is an iron ring attached by a swivel. Through this ring are passed the bands from the foot or knee, with which the extension is made. This apparatus performs the work of extension and counter-extension well, and I prefer it to any other which I have seen described. The splints cannot, however, be separated from the leg to adjust the dressing without removing the cross-piece, and thus for the time relaxing the extending force, at an inevitable risk of displacement of the fractured bones.

I, therefore, modified Dr. Flagg's modification by making the mortise holes in the side splints, instead of in the cross-piece, and constructing the cross-piece with a long tenon on each end to pass through the mortises. Thus arranged, the splints may each be moved aside a sufficient distance from the leg, the lower ends being guided and the cross-piece kept in place by the long tenons, without relaxing in the least the extension power. It will be understood that the splints are not to be removed *from* the cross-piece, but to be slid along the tenon so far as is necessary to arrange the dressing. Instead of a single wood screw, two metallic screws are used, each piercing the cross-piece in such positions as to receive a loop or band from either side of the foot. The loops may be attached to a gaiter or bandage on the foot, or to adhesive straps lying along the leg. A screw on each side makes extension with less compression of the foot than where only one, in the centre, is used; and there may sometimes be an advantage in keeping up extension with one screw while adjusting the band attached

to the other, or while relaxing it for the relief of the other. Instead of the ring with a swivel attached to prevent twisting of the band, a hook may be preferable, which is most convenient for hitching a loop; and a nut applied to the screw on the bottom of the cross-piece extends or relaxes without causing any twist, as the screw is not itself turned at all in the operation.

Fig. 1.

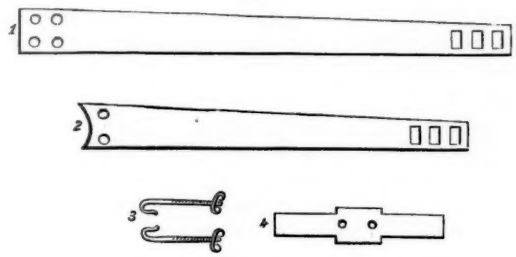
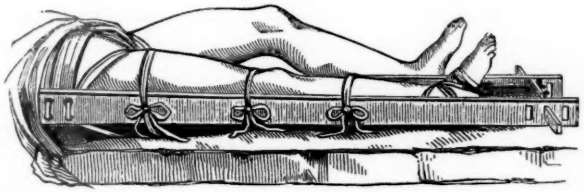


Fig. 2.



The above figures represent the apparatus—in its several parts, and as applied to the limb.

Fig. 1, 1. The long splint. It should extend from the crest of the ilium to six or seven inches below the foot. For a man of ordinary stature to be about four feet long. To be four or five inches wide at the upper end, three inches wide at the lower end; with holes near the top for tying the bands, and mortises as represented near the bottom for a tenon of the cross-piece.

2. Short or inner splint, six inches shorter than the outer, made concave at top to fit the perineum and well padded; in other respects the same as the long one.

3. The screws each six inches long; may be made of large iron or brass wire.

4. Cross-piece, fifteen inches long, three inches wide; tenons each five inches long, and of width to fit the mortises.

The apparatus has thus far seemed to answer all ordinary indications. The great improvement claimed for it, is the convenience of being enabled to move the splints off from the limb sufficiently to rearrange or change the dressing, without danger of displacement of the bones; a circumstance of much importance, both to the patient and to the surgeon.

It is, too, an admirable adjuster—furnishing so ready and powerful an extension force that the apparatus may be at once applied, and the lapping bones, gradually and without much pain to the patient, be brought into

position; thus enabling the surgeon to dispense with the services of an assistant in *setting the leg*—a circumstance, too, often of much convenience and importance.

It also serves as a fracture-box for the repose of the limb. Wadding and cushioning may be applied, *ad libitum*, between the splints and the leg, or it may be removed whenever it becomes too much heated. Rotary motion of the foot is prevented, thus obviating one objection to the single splint, and it is less confining and less irksome than when extended up to the axilla. Excoriations may easily be guarded against. The ischium and perineum may be relieved of pressure by counter-extending adhesive bands tied through the upper ends of the splints, and pressure on the foot and ankle may in like manner be avoided by using adhesive bands.

It is simple, too, in its construction, and may be made by any carpenter to suit occasion, or by the surgeon himself, if he is accustomed to the use of tools. This is no small recommendation in a country town, where the practitioner is so often thrown on to his own unaided resources.

The apparatus described is more especially calculated for fractured thigh and neck of the bone. I found it work well for oblique fracture of the bones of the lower leg. Other forms of splint may be preferred for the latter; but where simplicity, economy, and ready availability are sought, this has advantages.

Very many of the advantages claimed for this apparatus over most others in use, may also be claimed for Flagg's modification. Good authority has declared his "a great improvement upon Desault's," and "incomparably better than the method pursued by Sir Astley Cooper, in a case of fractured thigh." (See his work published by Massachusetts Medical Society, page 219.) And no higher recommendation need be sought for it than the statement that it has for so many years been continued in use in the Massachusetts General Hospital, and was used and approved by the late distinguished surgeon, Dr. John C. Warren. *The modification made by himself increases its efficiency, and thereby increases its value.*

The man for whose special benefit it was contrived, was, as before stated, irritable, and morose and impatient under restraint. And besides, his accident occurred in the heat of summer. He, however, got along well, could move his body about somewhat. The bones could, with gratifying facility, be kept in place by simply turning the screws whenever the bands became relaxed; very little padding was needed, thus allowing the limb to be kept cool; and in twenty-eight days from the occurrence of the injury the splints were removed—the limb perfect in *length* and *shape*, and it afterwards exhibited no appreciable evidence of the injury it had sustained.

ART. X.—*Observations on the Isthmus of Panama, and on the Hospitals of Havana.* By G. R. B. HORNER, M. D., Surgeon U. S. Naval Hospital, Warrington, Florida. (Communicated by W. WHELAN, M. D., Chief Bureau Med. and Surg. U. S. N.)

THE discovery of gold in California, ten years since, has vastly increased the transit of persons, merchandise, &c., across the Isthmus—greatly augmented the importance of this strip of land, and, indeed, rendered it the great highway of nations. The most important portion at this time is the western, or most northerly of the Republic of New Grenada, which forms nearly a semicircle. This is bounded on the east by the Caribbean Sea, west by the Pacific, and north by Nicaragua and Costa Rica. The narrowest part of the Isthmus lies between Panama and Chagres, a small town at the mouth of the river of that name, and about forty miles from the former town; but the latter having a small, insecure harbour, Aspinwall has been built on the island of Manzanilla, in Navy Bay, some miles south of Chagres, and a substantial, well-graded railroad is constructed between the two places. But this was accomplished at the expense of more than a thousand lives, chiefly those of Chinese labourers. Miasmatic fevers were the principal causes of the mortality. Many, however, died of neglect and bad treatment. When a Chinaman got sick, it is said, it was common to lay him down in the woods, with some food and water by his side, and let him lie there until dead, or well enough to get away. Other patients were sent down to the hospital of the railroad company at Aspinwall, from whence every two weeks about two hundred were sent to New York, so that the precise mortality among them was not ascertained.

The railroad runs through several extensive morasses—densely overgrown with palms, wild cananas, bushes, vines, and large timber—strikes the Chagres River where the Gaton empties into it, runs up the right bank of the former, crosses it at Barbacoas by an iron bridge, passes up to Gorgona twenty-eight miles from Aspinwall, thence through a valley, bounded by several thickly wooded, very verdant mountains, and attains the summit level, which is only 487 feet above the level of the sea. From there the road gradually descends to Panama, through the valley of the little stream termed Rio Grande, perhaps in ridicule. Last year a party of men and officers from our squadron, headed by Com. Paulding and Col. Totten, chief engineer of the road, crossed the Isthmus by the railroad, closely inspected the route and bay of Panama, and reported the feasibility of a ship-canal along the same route. The colonel estimates the cost at $70,000,000 for one 300 feet wide and 30 feet deep, with several locks in its course, and a breakwater at Aspinwall. The greatest obstacles to be encountered are the scarcity of native labourers, and the diseases incidental to foreigners, especially of the white race.

The bay of Panama and its numerous islands might afford anchorage for all the ships of the world which could be brought there; and the bay of Aspinwall could accommodate as many as would probably ever be collected in it, being two miles wide and three long; but being exposed to the north during the winter, when the wind blows strongly from the sea, it would require at least one very long breakwater, projecting into it from the eastern side of the entrance. All the Isthmus traversed by the railroad, and visible

from any part of it, is hilly and mountainous, has a diversity of soil, abounds in several varieties of basaltic rocks and volcanic remains, and is very fertile naturally. Its vegetable productions are numerous—and among them are yams, maize, cassana or tapioca, coffee, cananas, plantains, palm-nuts of various sorts, including the cocoa and cabbage, which affords much oil. The mangoo, lime, orange, small cheremaya, a large yellow species of annona, weighing sometimes three or four pounds, and belonging to the same class of plants as the former; the sour sop, abbacata or calligator pear, and the pawpaw as large as a musklin, are likewise produced; but the orange, from neglect in cultivation, is very rare. Indeed, so poor is agriculture throughout the country, that much more of all its products is due to nature than to its inhabitants.

Papyrus abounds in the swamps; some species of cinchona are said to grow in the forests, and the cedron-bean (used as an antidote for poisoned wounds) on a small tree below Panama. Many species of cactus and of parasitical plants are found; and the latter are seen covering the monarchs of the forest, feeding upon their juices, until the stoutest trees die and crumble to dust. In time the parasites decay; those which had formed the longest vines, sweeping from the highest branches down to the ground, fall to pieces, nourish it, and help the growth of the young trees springing up in place of those destroyed. Near the sea-shore the mangrove, as if on stilts, elevates itself upon its limb-like roots, and spreads its branches high above the water, preventing all access ashore to every kind of vessels.

Both along the shores of Panama and Aspinwall, coral is abundant. Many reefs are formed of it, some are old and dry, others new and fresh; and the former, when crumbled, mixed with decomposed shells and sand, forms a very productive soil for some vegetables. Some of the finest land is upon the sides of the Chagres River, which arises in the eastern part of the Isthmus, winds along to the westward, then to the northward, just before it reaches the railroad and Gorgona; is navigable from Cruses, seven miles above, and averages about seventy feet in width, as far as Gaton. From thence it increases in size, until it reaches the town of Chagres. The banks of the river are bold, overhung with shrubs, vines, and trees, and produce the sugar-cane luxuriantly.

The island of Manzanilla is on the eastern side of Navy Bay, about two miles around; it is formed chiefly of sand and coral, and in no part exceeds eight feet above high tide. Near its centre is a swamp flooded with water, and a large pond is left near the middle of the town, which was formerly a cove; but has been converted into its present shape by being filled with earth next the harbour. This pond is nearly encircled by houses, receives the overflowing water from the swamp, and communicates with the harbour, beneath the railroad; but is a mere receptacle of filth, and mostly stagnant. The people of Aspinwall are, therefore, at all seasons infested with miasmatic fevers.

The islands in Panama Bay are numerous; some are large, all are rocky, high, and picturesque, and mostly composed of sandstone, extensively used in building. Tobago is the principal island, and is several leagues around; it contains some hundred people, produces the pine-apple, some cocoa, tamarinds, cocoa-nuts, and other fruits; and has the iron-works of the English Steam-Packet Company on a promontory, projecting towards Panama. The population of this is about 6,000, that of Aspinwall about 1,500, and both are principally inhabited by negroes, mestizos, and mulattoes. The

greater part of the former in Aspinwall are manumitted slaves from Jamaica, who subsist by working for the railroad company, and by peddling and shop-keeping. They drink to excess, and are devoted to music and dancing.

The animal kingdom of the Isthmus is nearly as rich as the vegetable. The waters teem with fish; insects, reptiles, birds, and quadrupeds abound on shore. With hooks and seines are caught the red rockfish, the cavallo, a large species of mackerel, the croaker, gar, perch, and parrot-fish. The last takes its name from its being as varied in colour as that bird, and tinged richly with green and blue. Mullets, porpoises, the large green turtle, crabs, and sharks likewise abound. The turtle affords a very large part of the meat used at Aspinwall; the cattle killed there, from being driven far and illy fed, are poor and insipid. A few sheep, some hogs, goats, fowls, turkeys, and ducks serve also for sustenance to the richer classes; but the poor live chiefly on yams, plantains, bananas, and other vegetable food.

Among the wild animals of the Isthmus are the tiger, wild cat, mamoss or ant-bear, the deer, several species of monkeys, the alligator, and zæcæ, a large species of hedge-hog, of a brown colour, and having dark stripes on his back. Alligators abound in the Chagres River and other watercourses, on the banks of which they catch fish, and dogs, and within a few years have killed several persons.

Climate.—This is always sultry, never really cool or dry. The thermometer averages from 80° to 85° during the day, when the wind is blowing towards the land; but when off of it, as it generally does after 8 o'clock at night, it falls frequently to 76°, sometimes to 74°: and then from the free perspiration and sensibility of the skin, imparts such a sensation of coldness as to make woollen clothes pleasant. At Panama the heat is sometimes above 90°, and is more oppressive than at Aspinwall, where, in spring, summer, and fall, the wind mostly blows from the sea during the day, and from the land at night. During the winter it blows commonly from the northeast in the day, and causes a heavy swell in the bay. In the summer season it blows occasionally in squalls from that quarter, and is so stormy as to endanger ships at anchor there. After a tempest in winter, some years ago, so heavy a swell occurred, that three or four vessels were wrecked on the eastern shore of Manzanilla. One broke through the high, strong wharf of piles and planks, owned by the United States Steam-Mail Company. Another vessel was driven upon a reef opposite the wharf, broken to pieces, and wrecked on the adjacent shore, where she still lies. The range of the barometer is small. It rarely rises above $30\frac{1}{4}$ of an inch, and very seldom falls below 30 inches, so that it is not considered at Aspinwall or vicinity a good indicator of the weather. Rain falls there in showers, ordinarily during the afternoon and at night, for nine months, at intervals; but rarely from the first of December to March. During last fall we had rain, more or less, and usually after meridian, for six days out of seven. During that period the atmosphere was saturated with moisture; clothes, books, and sails were spoiled with mould; small mushrooms sprang up in quantities on the tarred ropes coiled on deck, and especially on those not exposed to the sun. The rusting of all metallic substances liable to oxidation occurs correspondingly to the moisture of the atmosphere, rendered still more corrosive by the evaporation of sea-water, charged with chlorine and saline particles.

Diseases.—The most prevalent diseases among the inhabitants may be said to be those of the bowels and miasmatic fevers; but from these they

are exempt in comparison with strangers from North America and Europe. All of these, who are white, are certain in a short time to be affected with some form of those fevers, remittent or intermittent, of the quotidian or tertian type. These also, I was informed by Dr. Moore, of Aspinwall, preceded the yellow fever there, as has been observed in other countries; although it is stated by Dr. Hammond, U. S. Army,[1] to have followed the epidemic yellow fever, at Warrington, Florida, in 1853, when it was introduced by some recruits at the navy yard, and infected the inmates of the hospital. But the crew of the Wabash were remarkably exempt from bowel complaints and miasmatic fevers. This exemption we ascribed to the men drinking exclusively the pure rain-water collected in the vast boiler-iron cisterns of the United States Steam Navigation Company, which are filled from the roofs of their buildings, and hold many thousand gallons. The people of Aspinwall also use rain-water altogether, as they have no wells, springs, or streams convenient. That our crew's exemption from diarrhœa and dysentery was owing to this water, is proved by the case of an English ship of the line, which, I understand, had many cases, after using the water of the river Mindi—a small stream emptying into the south side of Navy Bay; and some cases of diarrhœa occurring in our crew, from the rain-water being sometimes made saltish by its being brought in open boats, which had taken in some sea-water, whilst being conveyed from shore during heavy swells. Our comparative exemption from fever was owing mainly to the Wabash keeping at a distance from shore, to being thoroughly cleansed, and having her crew as little as possible exposed to the sun and malaria. Few of the men were permitted to land. But many suffered from boils, lichen tropicus, and various herpetic eruptions; some from rheumatism and neuralgia. During the last of August, 1857, about one-half were affected with influenza, which first attacked the crews of our ships of war at Panama, next the people of that town and Aspinwall, and was last heard of at the island of St. Thomas, 800 miles to the eastward. Besides the above, we scarcely had any diseases of the respiratory organs to treat—not a case of phthisis occurred in many months; but one of pneumonia, attending an attack of remittent fever with hepatitis, proved fatal last October. A man on board the Saratoga likewise died of pneumonia at Greytown, 300 miles north of Aspinwall.

The cutaneous affections were very numerous and troublesome to cure. Wounds and ulcers were indolent, and so irritable that the metallic lotions, as of sulph. of zinc, nitrate of silver, and acetate of lead, appeared poisonous, especially when applied to the privates; wounds and ulcers, moreover, often bled profusely; and in the treatment of the numerous cases among the passengers from Gen. Walker's army, brought to the United States, no dressings would retain the blood. This was dark, thin, and plainly venous. For the cure of ordinary prickly heat, the application of diluted aqua ammoniæ was successful; but when it became scabby and formed the regular lichen tropicus, the warm-bath, citrine ointment, and a solution of five or ten grains of argent. nitras were commonly used efficaciously; sometimes the flowers of sulphur or other laxatives were given. In the cure of ulcers I conjoined local and general remedies, and in that of boils I at first applied poultices of powdered linseed; but they often increased the size of the boils, were inconvenient to make, and consumed a large amount of muslin. I substituted, with advantage, the pure nitrate of silver, before or after

[1] See the Army Medical Statistics, lately published.

lancing. In the treatment of miasmatic fevers, I used saline purgatives, mercurials, the acetates of potash and ammonia, acidulous drinks, hot and cold water bathing, and the sulph. of quinine largely, in solution with the elixir of vitriol and white sugar. The complicated case above mentioned was the only one which terminated fatally. Although the yellow fever was at Havana twice, while our ship was in the harbour not a case of it occurred in her; I saw many, however, in the mercantile and great military hospitals in its vicinity, which had been brought there from the vessels and the different posts about the city. The former hospital is on the eastern part of the harbour; and near the suburb of Reglus is a private establishment, rented and kept by the two Drs. Belot. The latter hospital consists of two distinct buildings, some distance apart; but only one of them was occupied when I was there. The cases of yellow fever seen were principally convalescent, and two had been attended with black vomit. One was that of a native boy, the other that of an Englishman, and one American had died of the fever the day before. Two dollars a day were charged for each patient, and twenty dollars for every one buried. 1331 cases were treated last year, of which from 20 to 22 per cent. ended fatally; but in November, 44 out of 202 died. One of the Drs. Belot stated to me that the yellow fever was infectious, atmospheric, and epidemic, but not contagious like smallpox; that it was always worse in the harbour among the shipping; he pointed out a vessel in which a number of cases had happened, two of which were fatal; but at the same time showed me an American ship, which had been in port for two months and a half, without having had a case on board.

The worst cases I saw were in the military hospital, which stands on the western side of the harbour, near the beach, between it and the new part of Havana. This hospital was built in 1842, is of marble from the Isle of Pines, about 300 feet wide and 600 long, two stories high, forms two large courts, filled with flowers, trees, and plants, and in its arrangements, conveniences, and attendance, was not excelled by any other hospital I have seen in any part of the world. The wards were well planned, all opened into the galleries encircling the courts; contained 800 patients, attended by twenty physicians, a half of whom were residents, and nursed chiefly by twenty-three sisters of charity. The wardrobe, dispensary, laboratory, and kitchen were spacious and well furnished. The cooking was done in fine iron ranges, burning coal. Infected clothes were purified by fumigation from a furnace in a room appropriated for that purpose. Another one is converted into a chapel; a third one contains a library, mostly of French works, and some handsome anatomical preparations. Convalescents eat in a back portico, overlooking the harbour. The food is neatly cooked, and principally consists of rice, bread, soup, beef, and chicken.

Sick and wounded seamen are in separate wards, and not mingled with the soldiers. All patients lie on iron bedsteads, with linen sacking bottoms, save a few on cots. Every bedstead is supplied with two sheets, one blanket, and a pillow. Between every two beds was a close stool, behind a curtain, hanging from a semicircular rod of iron, fixed at its ends into the wall. Last year, during the prevalence of the yellow fever, the hospital contained 1200 patients per day, of which number 250 were of the above fever. It was then necessary to use the verandas as wards, and they were so wide as to hold the beds crosswise, and yet to allow persons to pass between them and the courts. In a ward containing fifty-five beds, I saw a number of cases of yellow fever indiscriminately mixed with those of other complaints, and was assured by the resident physician who attended the

ward that the fever was non-contagious, and very rarely infectious in the hospital. The cases were in the primary, middle, and last stages. In the first stage there was headache, injected eyes, hot skin, frequent pulse; tongue moist, and covered with a thick, white fur, and red about the edges. Those in the middle stage were more severely affected, and more jaundiced; but in none did I find the pulse very full and strong. One patient pointed to a tub of water, and said he had just thrown up blood. Two other soldiers, in the last stage, were most distressing objects. Their eyes and skin were of a saffron hue; their faces haggard and stupid; their mouths expanded; their tongues dry, brown, and hard; one of them had hiccough; blood stained their lips; the pulse was small, weak, frequent; the skin cold and dry. The bed of one was deeply stained with dark blood, and this was sputtered also on the floor at the side of his bed, and that of another young, dying Spaniard. No painter could find two more horrible pictures of death to copy.

Treatment.—There was some difference in this at the private and public hospital. In the former, the first medicine given was the sulphate of magnesia, in doses large enough to purge, for several days. They were aided by cathartic enemata; cups and blisters were applied over the epigastrium, when nausea and pain in the stomach occurred. Cups were also applied to the nape of the neck for pain in the forehead, a striking symptom; blisters were sometimes placed upon the legs, and, when black vomit supervened, Dr. Belot gave small doses of astringents—ratanhia, alum, and acetate of lead, with some opium. His patients were given for drink and nourishment, chicken-broth, rice, and farina.

In the military hospital the primary treatment was likewise purging, with the sulphate of magnesia; but it was given in the dose of ℥j with gr. j of tart. emetic, and then followed by the administration of other internal remedies, chiefly astringents, of which the principal was the tinctura ferri chloridi, given agreeably to circumstances. Of the comparative success of the treatment at the two hospitals I was not informed accurately, but understood it was about the same.

The practice on board American vessels, of giving calomel, jalap, and then castor oil, the above physicians condemned as injurious. Several hundred of their seamen died last year. One was deprived of her whole crew, and part of two others, in a fortnight, according to the statement of our consul; and yet the practice does not seem worse than that in the Spanish men-of-war at Havana, which, the admiral of the port informed me, "lost at the above time 900 seamen out of 4,000, of the vomito," as the fever is there termed commonly, a mere symptom and effect being taken for the disease itself. Dr. Belot and other intelligent physicians regard the vomit as a mere mixture of blood, bile, and gastric juice. But although he thinks the fever non-contagious, there are many proofs to the contrary advanced by other eminent physicians; and we might concede, at least, that sometimes typhus fever might be conjoined with it, as it is believed it was at Pensacola and Warrington, in 1853, and caused it to spread from ship to shore, and then to spread from person to person at Fort Barancas and the Naval Hospital, among patients already there with other complaints, and likewise among the attendants.

TRANSACTIONS OF SOCIETIES.

ART. XI.—*Summary of the Transactions of the College of Physicians of Philadelphia.*

1858, *Sept.* 1. *Intermittent Lochia.*—Dr. CORSE read the following account of a case of this affection:—

I attended Mrs. J—— in her confinement, which presented no unusual symptom; the delivery was effected in what is usually considered to be a favourable manner. After delivery, the secretion of milk was established on the third day, with a slight chill and a smart fever, familiar in the lying-in chamber under the name of milk fever. Upon its subsidence, the breasts filled with milk, and lactation was comfortably established.

Coincident with the gush of milk, the lochia underwent the usual diminution in quantity and change in quality from deep red to pale; and in the course of four or five days the sanguineous character had almost disappeared, leaving the usual straw-coloured or yellow discharge. On the eighth or ninth day, at 9½ o'clock A. M., the patient was seized with great pain in the lumbar region; this, in the course of half an hour or a little more, extended down the sacrum to the coccyx, and then a gush of blood or bloody discharge took place, which continued to flow as long as the pain lasted, which was nearly an hour; it then ceased with a subsidence of the pain.

I was immediately sent for, but did not reach her until after the pain had left and the flow ceased. The pulse was good, tongue clean, and all appearance of a comfortable and safe state presented.

The next day, at the same hour, the same symptoms came on, and ran the same course. I was again sent for, but only got to the patient in time to learn the history of a paroxysm in no respect different from the preceding; and seeing no indication for medicine, I gave none.

The third day I was again sent for, and was too late again; but, on my arrival, heard a repetition of the story, describing a paroxysm which ran precisely the same course. I made a very particular inquiry into all the attending circumstances—sleep, food, discharges of bowels, bladder, etc. All was perfectly satisfactory.

Next morning I called just after the time when the paroxysm should

come, and found her suffering great pain; the pulse not disturbed; tongue clean; surface normal in temperature; facial aspect exhibiting pain, but colour unchanged; nothing of the pallid cheeks and purple lips common in ague; hands and feet of usual temperature; in short, nothing but her words to indicate disease, except the sanguineous discharge from the vagina. A per vaginam examination did not reveal any change whatever in the uterus; it was not tender to the touch, swollen, or hot. The os was patulous to the extent that is usual from the eighth to the twelfth or fourteenth day after delivery. There were no inflammatory symptoms in the uterus or adjacent parts; the vagina was soft, moist, and cool; no mechanical obstacle to the exit of the lochia was observable; the character as well as the quantity of the discharge was totally changed during the paroxysm. The case, to me, being new, left me to speculate as to its nature.

I began my investigation by inquiring into inherited peculiarities, idiosyncrasy, and previous diseases. I thus learned that about a year ago she had spent some weeks, during the summer and fall, a short distance below Salem, New Jersey, and there had had the chills; she had been quite cured, however, and had not had them since. This brought to mind two cases of dysentery, formerly under my treatment, in which the dysenteric symptoms returned at regularly recurring periods. The first was a quotidian, which ran on nearly a week before I awakened to a knowledge of its nature; the other was a tertian; both of which were treated with antiperiodics, and both yielded to the treatment. I therefore, after closely inquiring into the state of the general organism, considered it expedient, in the absence of any special contra-indication, to apply the antiperiodic plan of treatment to this case.

It is well known that the puerperal state is one that contra-indicates very active treatment of any kind, and especially of stimulation or excitation. Inflammation of the uterus, puerperal mania, or meningitis, might be brought on or occur coincidently, therefore I adopted a moderate course to begin with. Eight grains of quiniæ sulphas, with one grain, each, of opium and ipecacuanha, were made into four pills, and one given every hour, beginning at 5 o'clock A. M.; by this plan all of them were to be taken by 8 o'clock A. M., one hour and a half before the paroxysm.

My next visit being made after the period for the usual diurnal attack, I found the patient comfortable and cheerful, and learned that the discharge was diminished in quantity and the attendant suffering greatly ameliorated. Not a single unpleasant symptom had been caused by the quinia; I therefore increased the quantity to twelve grains, which, with one grain, each, of opium, and ipecac., I had made into four powders, and gave one every hour, beginning, as before, at 5 A. M. On my next visit I learned that the patient had missed both pain and discharge. I then ordered twelve grains of quiniæ sulphas, to be divided into twelve pills, one to be taken every hour, beginning at 5 A. M., until four should be taken each

day. This terminated the treatment without any unpleasant symptom as the result, the patient having ever since continued well.

Oct. 6. Large Dose of Opium taken by a Child, without Fatal Consequences.—Dr. HAYS related to the College the particulars of a case in which a child, not quite six years old, was given a powder containing seven and a half grains of opium with the same quantity of prepared chalk (the former having been, by mistake, substituted for rhubarb, which had been ordered). Dr. H. did not see the patient until fourteen hours after the powder had been administered. He was told that the child, after taking the medicine, had seemed much excited; this was followed by restlessness and drowsiness, which continued at the time of Dr. H.'s visit. No vomiting had taken place. The narcotism was at no time very profound; it gradually wore off, and at the end of three days had entirely disappeared.

Drs. CONDIE, GRISCOM, and PAUL mentioned several cases in which large doses of laudanum had been taken by children without serious mischief.

Nov. 2. Vesico-vaginal Fistula.—Dr. R. K. SMITH read the following report of a case of vesico-vaginal fistula successfully treated, by D. HAYES AGNEW, M. D., of Philadelphia:—

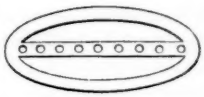
Frances Hargraves was admitted into the Philadelphia Hospital, Blockley, suffering from a vesico-vaginal fistula. The following account of the accident was obtained from the patient: In January, 1858, she gave birth to a child. Her labour was exceedingly difficult and prolonged, to aid which ergot was freely administered by her medical attendant. After delivery, for several days, she found herself unable to pass urine; which continuing to accumulate, and not being relieved by instrumental interference, she suddenly felt a large gush of water escaping from the vagina, since which time her urine has continued to flow by this route. Calling the attention of her physician to this condition of things, he suggested the necessity of an operation for her relief, which was accordingly performed in May, 1858. This failing, a second one was tried two or three weeks subsequently, with a similar result. The operation adopted was, I presume, that of Dr. Sims, with the button of Bozeman, as she described the employment of silver wires and a lead plate. Since the accident, she informs me, she has never menstruated; but alleges that, when the period comes round, a very copious flow of urine takes place, and continues for two or three days. About the 1st of July I was invited to see her by Dr. Robert K. Smith, the present chief resident physician of the Philadelphia Hospital, and, in company with himself and Dr. Elwood Wilson, made an examination. An extensive transverse rent was discovered, extending from one side of the vagina to the other, certainly one inch and a half in extent. Through this protruded a large amount of thickened and inflamed mucous membrane of the bladder, and along its edge the marks of

the old sutures were quite visible. At the suggestion of Dr. Smith, and her own earnest entreaty, I concluded to attempt her relief by another operation. As the last, however, had been done only three weeks previous, it was deemed most prudent to delay any efforts of the kind for six or eight weeks. The edges were soft, extensible, and deficient in callosity or density, which showed that they had not fully recovered from the recent attempt to cure. There was evidently not sufficient resistance in the tissue to maintain the tension of sutures for any length of time. To favour the desired condition, the parts were directed to be brushed over with a strong solution of tannic acid in glycerine every day. On the 23d of August I proceeded to operate, in the presence of Drs. Smith, Wilson, Levis, McClellan, Darby, Nichols, and the internes of the house. The bowels having been previously well emptied, the patient was thoroughly etherized, and, being supported on her breast and knees, lever speculæ were inserted along the lateral and posterior walls of the vagina, and the parts drawn well asunder; the edge of the fistula was seized by a pair of rat-toothed forceps, drawn well down, and pared by means of a long-handled straight bistoury. The greatest difficulty at this stage of the procedure was in freshening the angles of the wound, in consequence of the obstinate protrusion of large folds of the vesical mucous membrane. Succeeding, however, to my satisfaction, nine needles armed with sutures of fine silver wire were introduced by means of a forceps admirably constructed by Mr. Gemrig for this purpose, the two ends of which wires were brought out of the vagina and given in charge of assistants. These were next passed through a lead plate or button, having in it a number of holes corresponding to the sutures, and modified for reasons which I shall presently state. This being accurately adjusted, and the wires well tightened, pellets of shot were slipped down over each to the button, and firmly compressed by a pair of strong dressing-forceps, thus securing my ligatures in position. The long ends of the wires protruding from the vagina were well wrapped with adhesive plaster, to prevent excoriation, and a catheter was carried through the urethra into the bladder; the patient was placed on her side, an anodyne being administered, and a diet of arrowroot and cream ordered. She was then left in the care of Dr. Cowsins, one of the resident physicians of the house, to whose careful and judicious management I owe much of my success. The whole operation consumed about two hours, and though she was kept completely under the influence of the anæsthetic, with her head and trunk dependent, no inconvenience whatever was experienced, not even the ordinary nausea. It is unnecessary to give the notes of this case as kept from day to day, nothing of any interest having occurred until September 1. It is sufficient to say that her bowels were kept confined by the exhibition of a pill night and morning, containing a quarter grain of opium, the catheter was removed daily and cleansed, and the position on the side was carefully maintained. No constitutional disturbance whatever occurred,

very little local soreness was experienced, and no leakage discovered from the vagina. On Wednesday afternoon, September 1, being ten days after the operation, I proceeded to remove the plate and sutures, in the presence of Drs. Wilson, Levis, McClellan, and Richardson. The shot were clipped, the button withdrawn, and the wires severally picked out, when we had the pleasure of learning that complete union had taken place. As a precautionary measure, the catheter was allowed to remain for eight days longer, and the patient confined to bed on the side. On the twelfth day her bowels were gently moved, and again locked up for five or six days. Ten days after the removal of the ligatures she was allowed to walk about.

Remarks.—It will be seen from the above details that the operation in this case was that of Dr. Sims, varying only in the employment of the Bozeman button as modified by myself. To that modification I am disposed to attribute the success in this particular case. The proneness of the mucous membrane of the bladder to project through a fistula into the vagina I suppose has been noticed by every one who has seen a case of the accident. When the ordinary button is used, it is impossible for the surgeon to determine whether a portion may not have insinuated itself between the edges which he is approximating, and thus defeat the desired union. I think this may explain the failures which often occur. To obviate the possibility of such an occurrence, I requested Mr. Gemrig to make me such a button (lead) as is represented in the annexed cut, in which there is a centre-piece with holes through which to pass the ligatures, and between this and the circumference on either side two half-moon shaped pieces are cut out. The advantage is obvious. When it is placed in position, the operator can readily see if there be anything interfering with the accurate adaptation of the parts. Had I not adopted this button, I feel satisfied failure must have ensued, as I was obliged to press back in two places small portions of the mucous membrane of the bladder, which had worked down between the approximated edges of the wound, and which were easily discovered through the portions of the button cut out. This case proved also very conclusively, to my mind, the value of the metallic over the silk suture. There was scarcely a trace of suppuration, the ligatures being all well in place on the day of their removal, ten days subsequent to their introduction. This fact would induce me, in another case, to dispense with the button altogether, as, I believe, is now practised by Dr. Sims, simply twisting the wires, or otherwise to employ the twisted suture, using silver pins, and protecting their ends by shot.

Fig. 1.



Dr. R. K. SMITH stated that he had not seen this case since the middle of September. At that time he had been satisfied, with Dr. Agnew, that the cicatrization was complete, and the fistula entirely closed.

Since then the patient had been repeatedly and very carefully examined

by different surgeons, who all agreed that no solution of continuity could be discovered in the track of the fistula, although there was evidently some incontinence of urine. The cause of this leakage could not be determined, but it was not through any defect in the cicatrix. [The incontinence of urine has since been ascertained, by Dr. R. P. Thomas, at the Episcopal Hospital, to have been owing to an adhesion of the neck of the bladder to the uterus, and a displacement of the latter, by which the urethral orifice was drawn open, whenever the patient assumed the recumbent position. The difficulty was overcome by the introduction of a pessary. The patient has continued apparently well up to the present date, March 2, 1859.]

Dr. CONDIE remarked that he had been taught by experience the necessity of allowing, in cases of apparently successful operations for vesico-vaginal fistula, some time to elapse before deciding upon the permanent relief of the patient. In the three cases of operation for vesico-vaginal fistula that had fallen under his notice, the opening between the bladder and vagina remained apparently completely closed, in one three weeks, in another six, and in the third upwards of eight months, when, unexpectedly, it became open to the same extent as at first.

In the third of the cases just referred to, the operation was performed, in a most skilful manner, by Dr. Pancoast. The cure of the fistula was apparently permanent, and so continued to the end of eight months, when, in consequence of some unusual sensations experienced by the patient in the region of the bladder, an examination was made, and a large calculous concretion detected in the bladder, at the place where the fistula had existed. Ulceration soon after took place, and caused a reopening of the communication between the bladder and vagina. In the meantime the case had been reported as a triumphant cure.

It may be that the improved methods of operating recently introduced may be attended with a more permanent success than those adopted in the three cases just referred to.

Dec. 1. *Effect of Respiration on the Position of the Heart.*—Dr. DA COSTA read the following paper on the effect of respiration upon the position of the heart:—

In auscultating persons who supposed themselves affected with cardiac disease, I have had my attention directed to several points connected with the influence of the respiration on the heart, which seem of sufficient interest to warrant my laying them this evening before the College. The phenomena in question may have been noticed by others, but I have not been able to meet them referred to, and to me, at least, they presented the allurement of novelty.

If a full inspiration be taken, it may be usually observed that the action of the heart becomes slower, again to quicken in expiration; and, secondly, that the impulse between the fifth and sixth ribs is hardly or not at all per-

ceptible, whilst the sounds of the heart are only very faintly heard. The latter fact has been treated of in a paper which is now in print.[1] The effects of inspiration in rendering slower, and of expiration in quickening the movements of the heart, have been well investigated by able physiologists; but the change of the position of the heart during the acts of respiration, and the causes of this change, are comparatively unnoticed, and are the subjects which I wish especially to lay before the College.

The impulse, then, at its normal situation, disappears if a long breath be drawn, and the heart sounds at the left apex become almost inaudible. If now, whilst the inspiration is held, the chest be carefully watched, a new impulse can be seen, somewhat lower than between the fifth and sixth ribs, and towards the median line, at a point in which, in quiet breathing, no movement is perceptible.

Desirous of investigating these phenomena, I examined this new impulse —if, for convenience sake, it may be so termed—in a series of observations, made at different times, on healthy persons, having in each instance first accurately ascertained the extent of the percussion dulness of heart and the normal position and strength of the impulse of quiet breathing.

Inspiration.—During a full inspiration in ten adults the upper border of percussion dulness over the heart shifted to nearly the extent of an intercostal space. The impulse became, in all the instances examined, entirely or almost entirely imperceptible under the nipple, between the fifth and sixth ribs; but it was distinctly felt downwards and inwards, at a spot nearly on a level with the ensiform cartilage, immediately below the cartilages of the ribs, and varying from three-fourths to one and a fourth inch from the median line. In some cases, in which it was measured, the new point of distinct impulse was three and a half inches from the impulse beat of quiet breathing.

Percussion over this new point shows dulness and greater resistance to the finger. Near the nipple, between the fifth and sixth ribs, the sound becomes clear. Compared with the point of previous impulse, the beat is not quite as strong; the cardiac sounds heard over it are distinct, far more distinct than near the nipple, where they are almost inaudible, but not quite as distinct as they are at the apex during natural breathing. Especially is this the case with the first sound. The pulse corresponds, during full inspiration, to the somewhat diminished impulse; it is feebler. Yet neither diminished impulse nor feebler pulse is an invariable accompaniment of a forced inspiration.

Expiration.—During a full expiration the phenomena that are observable are almost exactly opposite. The percussion dulness over the heart increases markedly, especially at the upper border. The impulse is forcibly felt, and is extended over a larger space. Its point of distinctness moves

[1] American Journal of the Medical Sciences, January, 1859.

upwards; in some persons by more than the breadth of the rib. It may or may not be at all perceived lower down. The first sound of the heart increases in loudness, but by no means uniformly in distinctness; in some persons it is during a held expiration weightier but less distinct than during quiet breathing.

Having settled these points by repeated clinical inquiry, I sought to explain the cause of the phenomena. To me the conclusion seemed inevitable that not only is the heart during a full inspiration lowered, but its whole position is changed. It is carried not only downwards, but its apex is pressed forwards and inwards by the distended lung. If this be correct, it is evident that the effects of respiration upon the position of the heart have been erroneously stated even by those few authors who have said anything at all on the subject. To quote from standard authorities :—

"In inspiration, also," say Sharpey and Quain, "when the diaphragm sinks and the lungs expand, the apex is withdrawn from the thoracic parietes."

In the article "Respiration" in the *Cyclopædia of Anatomy and Physiology*, vol. iv., John Reid remarks: "But during forcible inspiration the heart recedes deeper into the chest, and during expiration it again comes forwards."

Valentin (p. 185 of his *Physiology*), mentioning the fact that during a full inspiration the heart's impulse is not as distinctly felt, attributes it to the intervening lung. He further adds: "And if a person turns in bed from the left side to the right side, the sensible impulse may likewise disappear. These facts, at any rate, teach us that the heart, which is inclosed air-tight in the chest, does not under all circumstances press against its wall."

Now these statements all indicate that the heart during a full inspiration recedes, or at any rate is removed from the walls of the chest; but do they explain the fact that a new impulse beat is perceptible lower down? Certainly not. The fact itself is not at all alluded to; the explanation of the fact is not possible according to any of the views just stated.

Walshe, who with characteristic completeness discusses the effects of posture and respiration upon the heart, states that inspiration, by carrying the diaphragm downwards, lowers the heart sometimes by an entire interspace, and removes the organ somewhat from the thoracic walls; "but it is to be remembered," he concludes, "that the depression of the diaphragm displaces the base more than the apex."

It is true that this lowering of the organ might account for the new impulse, by supposing it to be that of the right ventricle; but the disappearance of the apex beat from its normal point, and the visible impulse at another, seemed to me to demand a different explanation, namely, that the heart is not only somewhat lowered, but changed in its whole position, during the act of inspiration. It is carried not only downwards, but its

apex is moved inwards and forwards, and this change of position can only be brought about by the pressure of the distended lung.

Reasoning on the phenomena as observed in the living, led to these conclusions. The aid kindly afforded by Dr. Agnew enabled me to test by experiment their truth. The sternum of a subject was removed, and we then proceeded carefully to inflate the lungs. The change in the position of the heart was most striking. As the lung rose more and more, until it nearly reached the ribs, the apex gradually turned inwards, was somewhat lowered, and came distinctly forwards. If it had then struck the parietes of the chest, the impulse would have been visible at exactly the point in which it is observed to strike in the living subject during a full inspiration. The experiments were subsequently repeated, and invariably with the same results.

The next subject that suggested itself for inquiry was, what share the diaphragm has in producing the change in the position of the organ. On the inward and forward movement of the lower part of the heart it evidently has none. The descent of the diaphragm can, of course, only influence the heart through the connection of the pericardium to the diaphragm; and, again, through the attachment of this membrane to the large vessels after they leave the heart. Now, the effect, if the diaphragm move, will be to lengthen the vessels, and thus to lower the whole situation of the heart, but not to turn its apex inwards. Nor is it by any means certain that the downward action of the diaphragm can lower the heart much. The tendinous centre of the diaphragm, to which the pericardium is attached, moves but little, far less than is usually supposed, and its descent is further counteracted by the connection of the deep cervical fascia with the upper end of the pericardium. In order to study the motions of the diaphragm, the abdominal walls of a subject were opened, and all the viscera, excepting the liver, removed. The lungs were then inflated by a tube passed into the trachea. The muscular fibres of the diaphragm descended more and more, and finally bulged out on each side of the tendinous centre; but this neither descended nor ascended much during the acts of inspiration or expiration.

These experiments prove the displacement of the heart to be only in part produced by the diaphragm, much more by the sweep of the distended lung. The forward motion of the organ owns the same cause.

In cases of hypertrophy of the heart the act of inspiration produces a similar displacement; but whether as much, I am not yet able to say.

It may be well here to allude to an argument which might be urged against the interpretation of the changed impulse. As during a full inspiration the ribs are elevated, the finger applied over them is naturally brought up higher, and the heart might thus appear displaced, when, in reality, the ribs are. This is true. But it will not explain an impulse perceived near the median line; and, again, the experiment of removing

the sternum permits the influence of this source of fallacy to be exactly appreciated.

It is hardly necessary to discuss the causes of the phenomena observed in expiration. They follow as a corollary to those of inspiration. The recedence of the lung, the somewhat altered position produced by the different action of the diaphragm and by the absence of all traction on the large vessels, will explain the increased extent and change of impulse, and the enlarged percussion dulness. There are also probably other causes connected with the quantity and state of the circulating blood, and the varying distension of the heart during the respiratory acts, which must be taken into account; but until physiology lifts the veil which enshrouds the relation of the circulation to the respiration, no absolute conclusion can be arrived at as to an apparent increased size, and, still more so, none as to changes in the strength of the impulse.

Tænia cured with Pumpkin-Seeds.—Dr. HUNT exhibited a large portion of a tapeworm, which had been discharged from a patient whose case he briefly narrated.

The patient had been suffering at least two years, and during that time had taken all the ordinary remedies, without apparent relief. Dr. Hunt determined to try the pumpkin-seeds, and at first administered them in the form of an emulsion. For this purpose the seeds were deprived of their envelops, and rubbed with sugar, gum, and water. Two doses, of six fluid-ounces each, were given in this way on an empty stomach. The effect produced was slight, small pieces only of the worm coming away, and mostly in single joints, as it had been coming for the previous two years. He next prescribed the kamala, which has been recently extolled. This, however, only brought on a violent purging, without expelling any of the worm.

After the irritation from the cathartic action of the kamala had subsided, the pumpkin-seeds were again resorted to; but this time they were not deprived of the hulls, and were bruised in a mortar, or rather crushed or ground in a press, by an apothecary. Eight ounces of the seeds were thus reduced to a mass, of which the patient swallowed about one-half at bed-time. The remainder was made into a decoction with boiling-water, strained and taken before breakfast the next morning. The effect was very prompt; a large section of the worm coming away after the first dose, and a much larger one after the second. Although the head was not found, there was good reason for presuming that the patient had been cured, since he had continued several weeks entirely free from the symptoms which had, until that time, indicated the presence of the parasite.

Dr. E. WALLACE mentioned a case of a child, in which he had succeeded in removing a tapeworm by the use of pumpkin-seeds, crushed and rubbed up in a mass with sugar.

Imperforate Rectum.—Dr. CORSE reported the following case :—

Peter and Alice Kayton called at my office with their infant, on Friday afternoon, November 26, 1858, for the purpose, as they stated, of getting something to open the child's bowels, and from them I learned that she was born, at some distance from this city, on Sunday morning, November 21, 1858, a little after midnight. On Sunday evening it was observed that she had had no passage from the bowels, and this led to an examination which gave rise to the suspicion that something was wrong; up to this time she had not sucked, although the nipple had been repeatedly placed in her mouth.

On Monday morning a piece of soap was pushed into the anus, and a small quantity of black matter came away with it. She still refused to suck.

On Tuesday morning a dose of magnesia was administered to her, and "soon after she sucked as well as any child." Upon inquiry I found that the mother's breasts then for the first time filled up with milk.

On Wednesday morning a practitioner of the neighborhood was called in, and ordered three powders, one to be given every six hours.

On Thursday morning the mother took castor oil, having been told that that would open the child's bowels. This day the child for the first time vomited, and the matter discharged was of a green colour.

On Friday the child again vomited "*yellow, nasty, ropy stuff.*" They then became uneasy, came to Philadelphia, and called on me late in the afternoon; on examination, by means of a gum-elastic bougie, I immediately discovered the nature of the case, and appointed 10 o'clock next morning to operate.

On Saturday morning the infant "*vomited milk, only a little.*" On more elaborate examination I found the anus perfect, with an opening a full half an inch in depth, consisting of a blind pouch or *cul-de-sac*. I then passed a silver female catheter into the vagina, and found that the posterior wall was very close to the integument, and followed the course natural to the rectum, laying on the floor of the perineum, there being nothing between the two membranes which I could suppose was a canal.

Although generally denominated imperforate anus, the several varieties of this abnormity present important differences. 1. Simple occlusion of the anal opening by a membrane more or less thick; in this variety there will appear at the point where the anus should open, a fluctuating tumour of a dark colour, distended by meconium. 2. The anus may be perfect, and a short distance up there may be a septum of greater or less extent. 3. The rectum is absent, and there may or not be an anus: to this last variety the case above described belongs.

There are other abnormal arrangements of the rectum which have sometimes been described under the name of imperforate anus; but improperly

so. They consist of the rectum opening into the vagina, bladder, or urethra.

Among the different operations which have been proposed to remedy the deformity under consideration, there are three, each of which is based upon a different principle; and each admits of greater or less variation, according to the circumstances of the case.

1st. An artificial opening is made in the perineum, and the dissection carried into the pelvis in the direction where the rectum would naturally be located.

2d. An operation for artificial anus, invented by Callisen and since modified by Amussat. It is based upon the fact, that the colon in the left lumbar region has not a peritoneal covering posteriorly; it may, therefore, be reached without opening the peritoneum. Callisen's operation consists in making an incision in the left lumbar region, parallel with the spinal column, from the crest of the ileum nearly to the lower rib, and not far from the ends of the transverse processes of the lumbar vertebra. Amussat has modified this operation by making the incision almost at right angles with the vertebral column, and deepening it with great care until the colon is reached; the gut is then seized with a hook, drawn out, and opened.

3d. Littrè's operation in the left iliac region, is effected by an incision parallel with Poupart's ligament, opening the cavity of the peritoneum, and thus exposing the bowel; this must be drawn out, retained in apposition to the integumental aperture a sufficient length of time for the establishment of adhesion, and then evacuated by incision.

The operation performed here was in the perineum, and the cutting extended as far as prudence would permit.

I commenced by making an incision posteriorly, cutting through the sphincter ani muscles; and after dilating the orifice, sought for a fluctuating tumour of a dark colour, but found nothing of the kind. The incision was then extended posteriorly towards the coccyx, all the while keeping a vigilant look out for any soft body that might appear. By degrees the dissection was cautiously carried backwards along the hollow of the sacrum, using the catheter in the vagina to prevent cutting into it, until I reached the superior strait of the pelvis; having separated the pelvic contents very freely from the sides around, an opportunity was thus afforded for the intestine to descend; nothing of the kind made its appearance, and I was fearful to carry the dissection any further, lest I should cut the aorta or primitive iliac.

I placed a tent of lint in the wound, and had the child brought to me the next day; a careful examination was made, but nothing like the bowel appeared, nor was there any tumefaction of the abdomen.

Monday morning the father called to inform me that no evacuation from

the bowels had taken place; but the child sucked well, slept well, and passed plenty of urine.

Tuesday morning I learned from the father that the child seemed in every way comfortable; she sucked greedily, slept well, urinated abundantly, and had some bearing-down efforts, as in evacuating the bowels.

Wednesday—this morning, at 4½ o'clock, a change took place; the child seemed weak, gradually sank, and expired without a struggle, at 9¾ A. M., having lived a little more than ten days.

The case had several features, which struck me as being extraordinary. 1. The child sucked greedily from the time the flow of milk was established until a very short time before its death. 2. It rested remarkably well, not at any time evincing suffering of any consequence. 3. It vomited very little, indeed; this leads to the supposition that the milk was digested and absorbed. 4. There was no tumefaction of the abdomen until the last few hours of its life.

We are then to suppose that the detritus of the azotized tissues passed away as urea and other constituents of the urine, which was very copious; and that the carbo-hydrogens were converted into carbonic acid and water, and passed away by the lungs, skin, and kidneys. The distension of the abdomen towards the last was sudden, and was, probably, due to the evolution of gas, and not to accumulation of feces. The child was named after a relative, and many fine expectations were disappointed by its death; under these circumstances I was denied the privilege of making a *post-mortem* examination, although I earnestly solicited it.

An autopsy in this case would, of course, have afforded a contribution both to teratology and physiology.

Hemorrhage from the Pharynx, resulting from the partial swallowing of a piece of cartilage.—Dr. PACKARD exhibited a thin triangular and pointed piece of cartilage, 2¼ inches long and 1¼ inch wide, the epiphysis of the breast-bone of a young turkey, which had been partially swallowed by a man about forty years of age. It was supposed to have lodged in the œsophagus, about one inch below the level of the top of the larynx. After suffering more or less from it, and being unable to take any solid food until it was expelled, he managed to pull out the fragment on the sixth day.

No unpleasant effects were observed by the patient until the evening of the eighth day, and the second day after the removal of the foreign body. He was then suddenly attacked with a copious arterial hemorrhage, losing, in a short time, about three pints of red blood. Dr. Packard was immediately called upon, and succeeded in stopping the flow of blood by free applications of tinct. ferri chlor., with a probang and sponge, introduced into the pharynx. Another less copious hemorrhage occurred, after an interval of forty-eight hours, and was checked without difficulty in the same manner. The patient has since then escaped a further attack.

1859, *Jan.* 5. *Improved Spirometer.*—Dr. S. W. MITCHELL exhibited an improved form of spirometer, of which he gave the following description:—

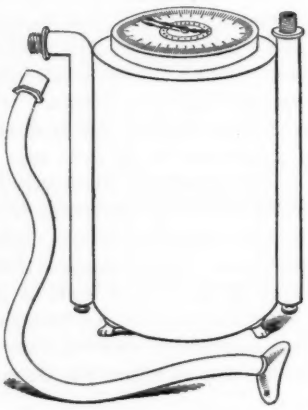
While conducting some recent researches upon the physical statistics of natives of this country, I was struck with the clumsiness, and, in some cases, with the inaccuracy, of the form of spirometer in common use. This instrument, well known as Hutchinson's spirometer, is accurate in its indications when well made, but is always inconvenient, because it requires to be filled with water, and, on account of its weight and form, is not easily carried from place to place. This latter objection applies equally to all the spirometers I have examined; while most of the instruments made on this side of the water are also open to the additional objection of want of accuracy.

The instrument which I have used in its place is merely a small "dry gas-meter," numbers of which are made in this city by Messrs. Code, Hopper & Co. With the aid of Mr. Gratz, a member of this firm, some slight alterations were made in the valves of the meter, and the inlet-pipe was somewhat narrowed. A large dial-plate, graduated to inches and halves of inches, was also placed on top of the meter, so that the rotation of an indicating hand would mark the number of cubic inches which passed through the machine.

It is unnecessary to describe the interior details of the meter thus adapted to spirometric use. In the form of a dry gas-meter it has been used, almost to the exclusion of the very inconvenient "wet meter," in many parts of this country, and has been found to perform its work of registration, for years together, without serious error and without needing repairs.

The instrument thus briefly described is figured in the annexed cut. Its height is but fourteen inches, its width eleven. The inlet-pipe is so marked, and to this, when arranged for use, an India-rubber tube and mouth-piece are attached. The inlet and outlet-pipes form convenient handles when the spirometer is to be carried.

Fig. 2.



I have tested the accuracy of this little instrument with great care, and have put it to more severe trials than the meter is usually subjected to. Its indications appeared to be almost perfect. The new form of spirometer runs with so little friction, that a pressure of one-eighth of an inch of water will move it readily. One

source of error is thus avoided, since, if the instrument did not move easily, the first air blown into it would be more or less condensed, and so occupy less space than it should do.

After the spirometer has been used fifty or sixty times, the moisture from the breath, which collects in the form of a few drops of water within the instrument, should be allowed to escape by the removal of a button placed underneath the meter.

The form of spirometer here described has lately been employed by a committee of the biological department of the Academy of Natural Sciences of this city, to measure the pulmonary capacity of some five hundred men. In every way the instrument was found to be satisfactory, being portable, requiring no water, and not being readily deranged.

So far as the committee have gone, they have seen increasing reason to regard with distrust all spirometric valuations of men. In every case they have been careful, by repeated trials, to obtain the best result of which the individual was capable; but they have been, so far, much impressed with the difference between their own results and those obtained by others abroad. As the height, weight, and girth of chest have also been taken, the committee hope, at some future time, to be able to report in detail their results, as bearing upon the lung capacity of men born in this country.

The spirometer is to be obtained from Messrs. Code & Hopper of this city, well known as manufacturers of gas-meters. The cost of the new instrument will probably not exceed fifteen dollars, which is less than that of the worst form of the ordinary spirometer now in use.

Feb. 2. *Report on Meteorology and Epidemics.*—Dr. WILSON JEWELL read the following report on meteorology and epidemics for 1858:—

In submitting the annual report to the College, on meteorology and epidemics, I have occasion anew to refer to the incompleteness of the tables and computations, the inevitable result of inherent difficulties from defective returns under the existing law for the registration of deaths.

The best estimate of the health of our city can only be derived from its records of mortality as compared with those of former years and other cities. The value, therefore, of such a record, depends upon its accuracy and truthfulness.

Our statistics, however, are, like many elsewhere collected, not only imperfect in systematic arrangement, but very general, and, in some instances, of doubtful character. This latter defect is attributable in a great measure to the irresponsible sources from which they emanate, and to the frequent false returns made by ignorant and knavish pretenders in medicine, between whom and the scientific and educated physician the statute-books of our commonwealth, as well as a misguided public, recognize no distinction.

While it is humiliating to refer to the existence of such irregularities, it

is no less essential, in order that proper allowance be made for the incongruities which may be discovered in these records of mortality.

But, notwithstanding the imperfections alluded to, fragments of reliable information have been gathered through these channels, from which may be drawn truthful conclusions bearing upon the relative cause and effect of disease, as it has prevailed from year to year in the midst of our population.

Nor are these scanty records less useful for stimulating us with enlarged desires to secure the collection of more perfect returns, not only of deaths, but of births and marriages, until the vital statistics of our extended municipality shall become a stand-point from which we may not only look abroad, and, with some degree of precision, discover and investigate the nature and cause of our prevalent diseases, but provide adequate means to guard against the introduction of those deleterious agents that vitiate our atmosphere, or in other ways become the causes of sickness and death in our community.

I shall not therefore be considered ultra in my opinion if I affirm, that our mortality tables for Philadelphia never can be otherwise than as represented, until a more complete system of registration has been secured by legislative enactment. In this connection I cannot resist adverting to the many imperfections in the nomenclature of diseases, as employed by those who furnish the certificates of death received at the health office in our city. I refer more especially to the entire absence of a uniform method in reporting the causes of death. Very few of our physicians adhere to any one particular nosological arrangement. Indeed, I apprehend that many, whose duty it becomes to give certificates of death, have so limited an appreciation of this important department of science, that they feel no incentive to answer its demands; while to the unscrupulous pretender, who never looks beyond the sordid motive of pecuniary gain in the pursuit of his calling, it is a question of entire indifference what name he shall give the disease of which his patient died, admitting that he possesses sufficient intelligence to inform himself of the true cause of death. I do not make these remarks in a censorious spirit, nor from a belief that this want of accuracy is peculiar to our own city. Similar imperfections exist elsewhere, in other cities, and, in some instances, to a far greater extent. The true cause of the irregularity to which I have reference will be found in the absence of a uniform and approved nosological classification of diseases.

A careful comparison of the record of deaths for 1858 with that of the two preceding years, will present a single feature which can only be attributed to the defective plan now pursued in certifying to and in recording deaths. In the table of mortality for 1857, as reported to the College, the causes of death are represented by 201 distinct names, and in 1856 by 195; in the one under consideration, for 1858, there will be found only 112, less by 86 than the average of those in the two preceding years. In presenting this statement, I do not desire to be understood as entertaining for a single

moment the opinion, that the causes of death from one year to another should correspond in every particular, both as to numbers and variety; but while I take a common sense view of this subject, and make careful allowance for changes and inaccuracies in each tabulated record of names of diseases, I cannot understand on what principle so great a difference should occur as that referred to, especially when there are no deaths recorded from some of the most frequent forms of disease.

Under the title of cancer and scirrhus will be found 125 deaths, but in no instance is the special organ or structure involved, designated. Nor are there deaths named in the table from any form of disease of the uterus or ovaries, except the 36 deaths from puerperal fever, which fall below the usual amount for the year. Deaths from hemorrhage of the lungs, stomach, or bowels, disease of the bladder or kidneys, are all wanting. It is asking too much to believe that during the year there had not been a single death from any of these diseases. The fact should not be overlooked, however, that the unusual health of our population might possibly have exerted an influence upon the change in the causes of death to which I have reference. Still, I am not disposed to advocate the idea, that this apparent exemption from sickness would effect an alteration to the like extent as manifested in the record, much less from the same class of diseases. It must have resulted from other and less legitimate causes.

The only rational causes I can educe for the absence of these terms from the record are the loose and imperfect system of registration, a defective classification of diseases, and, last, though not least, sheer carelessness and incompetence in many to investigate the cause of death.

This entire subject of registration and classification of diseases in this country is now commanding more attention than ever before. Physicians, men of science, statesmen, and political economists are becoming interested in those great principles which involve the science of life, and are thoroughly investigating their influence.

Eight of these United States have at this time in successful operation well regulated and reliable plans, legally enforced, to register the births, marriages, and deaths in their respective commonwealths. In several other States the subject has been agitated, and preliminary steps taken to secure similar laws. Pennsylvania still slumbers over these vital interests of humanity. Other and less important claims she watches with an Argus eye, but can behold no wisdom in watching over the health and the lives of her citizens.

I am happy to announce, however, that another effort, bearing the approval of this College, is now in progress to procure a law for Philadelphia only, for the registration of births, marriages, and deaths. I confidently hope that the next report on this subject will embrace so desirable an improvement, and harbinger the dawn of a new era, in the collection and analyzation of the vital statistics of our city. In this event, the foundation

for a superstructure will be laid, that shall augment in value and importance from year to year, as the work progresses, until it shall exhibit a proud monument, teeming on every side with reliable data, for the employment of the intellect and industry of a future statistician, out of which he may determine with accuracy the growth or the decay of the public health.

Nor will the advantage be confined to our own city. I flatter myself, that, if the law is secured, its usefulness will be made so evident in a few years, that the necessity for one embracing the entire State will be so widely recognized, that no difficulty will be experienced in obtaining its passage through the Legislature.

The report of that distinguished statistician, Edward Jarvis, M. D., of Mass., presented at the last session of the American Medical Association, on the law of registration, is replete with interest. It evinces a sound knowledge of the subject, and reflects great credit upon its author, placing him high in the list of writers on medical literature and medical statistics. In this article a statistical nosology is furnished, for the consideration of the profession, which is a revision of the one adopted by the association in 1847. Dr. Farr's plan of classification of diseases, as followed by the Registrar-General of England in his valuable reports, is also appended; and the writer says, "it is worth our consideration whether it would not be better to adopt this system for the American States, although looking to its merits alone, it may be inferior to that already in use."

Highly as I appreciate the experience and judgment of Dr. Jarvis in all matters that appertain to sound logic in medical statistics, and much as I may approve the motive that directed the above opinion, I am not ready to indorse it. There is no reason why we should not establish a system of statistical nosology peculiarly our own. We are not only capable, but our national character, our social condition, our climate, our physical and mental peculiarities, our habits and manners, and our principles of free government, all seem to urge upon us strong claims for an American system of classification of diseases.

At present this question is an unsettled one in our country. Doubtless it will remain so for some time, or until the combined judgments of the States shall see eye to eye in behalf of those vital interests of health and life, which are intimately allied to this whole subject.

When that enlightened period arrives, and it may not be far distant—when each State shall be prepared to enact uniform laws of registration, then will be the proper time, and the appointment of a medical commission, embracing delegates from all the States, suggests itself to my mind as the only sure provision for arranging and securing a system of classification of diseases, which shall not only be uniform in its arrangement, but acceptable, efficient, and permanent in its operation.

For present use, the table of the American Medical Association, adopted

in 1847, with a few slight alterations, may answer our purpose. It is concise, simple, easily understood, and available.

The annexed record contains an abstract from observations on the atmosphere and its phenomena, as made by my friend, Jas. A. Kirkpatrick, A. M., Professor of Civil Engineering in the Philadelphia High School, whose kindness I must again acknowledge.

These observations have been prepared with great care for the Smithsonian Institution, at Washington, and may be relied upon for their accuracy.

From this abstract we learn that the mean temperature for the year was 55.20°, an increase of 1.72° over that of 1857, and a higher mean temperature by 1.31° than for the last seven years.

The maximum temperature for the year was 96½°. This was on the 28th of June. The minimum temperature was 10° on the 5th and 6th of March.

The warmest days were the 28th of June and the 11th of July—the mean temperature being 89.2°.

The coldest day was the 5th of March, when the mean of the thermometer was 14.3°.

February was the coldest month in the year—the mean temperature being 30.11°.

July was the warmest month—the mean heat being 79.20°.

The monthly range of the thermometer for the year was 86½°, and the daily range 5.18°.

The mean of the thermometer for the summer was 77.24°, and for the winter 37.22°.

The least variable month was May, the range standing 35°.

The barometer ranged for the year, monthly, 1.325 inch—while the annual mean was 29.885 inches; nearly equivalent to the mean for seven years.

The highest point of pressure shown by the barometer was on the 8th of January, when it stood 30.531 inches; and the lowest was on the 21st of December, 29.206 inches.

The due point in its maximum for the year was 78.5°, and the minimum 13.5°.

The relative humidity of the atmosphere in its maximum was 100 per cent., while the minimum per cent. was 18.

The amount of rain that fell during the year was 41.059 inches, which was less than the rain in 1857 by 7.389 inches. The greatest depth of rain and snow in any month was in December, amounting to 5.459 inches. The least quantity was in March, only 1.124 inch.

The rain for the year was 2.94 inches less than for the last seven years.

General Abstract of Meteorological Observations, made at Philadelphia, Pa., during the year 1858.

By JAMES A. KIRKPATRICK, A. M., Prof. of Civil Engineering in the Philadelphia High School.

1858.	THERMOMETER.									BAROMETER REDUCED TO 32° F.							
							RANGE.		Mean of daily oscillations.						RANGE.		
MONTHS.	7 A. M.	2 P. M.	9 P. M.	Mean.	Max.	Min.	Monthly.	Mean daily.		7 A. M.	2 P. M.	9 P. M.	Mean.	Max.	Min.	Monthly.	Mean daily.
	°	°	°	°	°	°	°	°	°	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
January . . .	36.65	45.44	40.34	40.81	62	22	40	5.94	14.0	29.970	29.925	29.959	29.951	30.531	29.410	1.121	.208
February . . .	24.84	34.95	30.52	30.11	53	11	42	6.08	14.4	29.907	29.848	29.867	29.874	30.253	29.404	.849	.190
March	34.11	47.71	40.19	40.69	71	10	61	5.98	17.1	29.829	29.777	29.815	29.807	30.271	29.306	.965	.171
April	47.00	59.40	51.15	52.52	84	33	51	7.03	17.3	29.774	29.729	29.751	29.751	30.049	29.325	.724	.150
May	55.26	64.79	57.87	59.31	81	46	35	5.48	14.6	29.819	29.790	29.809	29.805	30.250	29.386	.864	.158
June	73.78	83.57	75.28	77.55	96½	53	43½	4.39	18.3	29.836	29.797	29.808	29.813	30.041	29.605	.436	.072
July	75.13	85.31	77.23	79.22	95½	60	35½	3.67	17.2	29.845	29.805	29.831	29.827	30.124	29.534	.590	.094
August	70.08	81.03	73.77	74.96	90	54	36	4.42	16.1	29.843	29.809	29.836	29.829	30.098	29.550	.548	.095
September . . .	61.32	76.03	66.37	67.92	88	41	47	4.05	19.7	29.944	29.892	29.925	29.922	30.217	29.343	.874	.135
October	53.32	66.63	58.53	59.49	90	35	55	5.32	17.3	29.934	29.876	29.918	29.906	30.318	29.382	.936	.143
November . . .	38.52	46.23	41.90	42.22	68	24	44	3.53	12.3	29.805	29.780	29.807	29.797	30.060	29.430	.630	.136
December . . .	34.50	40.97	37.47	37.65	63	15	48	6.30	11.8	30.002	29.955	29.966	29.974	30.459	29.206	1.253	.206
Annual means .	50.38	61.00	54.22	55.20	96½	10	86½	5.18	15.8	29.875	29.832	29.858	29.855	30.531	29.206	1.325	.146
Winter	32.97	41.92	37.05	37.32	64	11	53	5.91	13.9	29.931	29.881	29.912	29.908	30.531	29.266	1.265	.201
Spring	45.46	57.30	49.74	50 84	84	10	74	6.16	16.3	29.807	29.765	29.792	29.788	30.271	29.306	.965	.160
Summer	73.00	83.30	75.43	77.24	96½	53	43½	4.16	17.2	29.841	29.804	29.825	29.823	30.124	29.534	.590	.087
Autumn	51.06	62.96	55.60	56.54	90	24	66	4.30	16.4	29.891	29.849	29.883	29.874	30.318	29.343	.975	.138
For seven years .				53.89	100½	—5½	105½	5.52					29.880	30.709	28.895	1.814	.151

Meteorological Observations—Continued.

1858.	RELATIVE HUMIDITY.					FORCE OF VAPOUR.						WINDS.	CLOUDS. Tenths of sky covered.			DEW-POINT.				
MONTHS.	7 A.M.	2 P.M.	9 P.M.	Max.	Min.	7 A.M.	2 P.M.	9 P.M.	Max.	Min.	Rain and melted snow.	Monthly resultant; No. of times in 1000.	7 A. M.	2 P. M.	9 P. M.	7 A.M.	2 P.M.	9 P.M.	Max.	Min.
	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Inch.	Inch.	Inch.	Inch.	Inch.	Inches.					°	°	°	°	°
January . . .	75	59	69	96	26	.171	.187	.182	.505	.078	2.686	N. 54° 44′ W., 299	5.9	6.4	5.1	29.40	31.19	30.76	59.3	12.9
February . . .	71	54	67	96	26	.102	.111	.119	.246	.042	2.393	N. 64° 32′ W., 302	6.1	6.1	4.5	16.70	19.32	21.02	39.8	—0.7
March	65	44	58	90	18	.138	.162	.156	.448	.023	1.124	N. 71° 0′ W., 398	4.9	4.6	3.0	23.10	25.31	25.86	55.9	—13.5
April	71	49	66	96	23	.238	.248	.256	.505	.089	4.681	N. 3° 38′ E., 104	6.4	6.9	6.0	37.59	38.06	39.64	59.3	15.8
May	75	60	72	97	26	.330	.366	.352	.691	.191	5.308	N. 63° 26′ E., 210	7.8	6.9	6.2	46.87	49.07	48.32	68.3	29.2
June	72	55	72	94	31	.606	.627	.641	.934	.361	4.205	N. 71° 34′ W., 234	5.3	5.9	4.1	63.78	64.85	65.42	77.2	50.0
July	72	50	69	86	32	.632	.615	.657	.975	.368	1.454	S. 37° 42′ W., 173	4.8	5.2	2.6	65.09	64.10	66.26	78.5	50.5
August	78	55	71	95	37	.589	.583	.605	.864	.319	5.157	N. 77° 28′ W., 55	5.6	6.2	4.5	63.03	62.52	63.71	74.9	46.7
September . .	79	50	72	95	34	.451	.465	.483	.792	.166	1.389	S. 88° 38′ W., 258	3.9	3.9	2.5	54.61	55.35	56.65	72.3	29.9
October . . .	79	53	73	97	24	.238	.351	.373	.591	.126	1.778	S. 84° 48′ W., 202	5.3	5.1	4.3	46.62	47.06	49.81	63.7	23.5
November . . .	79	61	73	96	33	.192	.195	.204	.361	.090	5.225	N. 41° 5′ W., 309	6.5	6.8	6.5	32.43	32.23	33.82	5.00	16.1
December . . .	80	69	78	100	33	.169	.172	.188	.424	.071	5.459	N. 34° 26′ W., 245	7.6	7.2	6.3	28.82	30.80	31.11	60.3	10.9
Annual means .	75	55	70	100	18	.330	.340	.351	.975	.023	41.059	N. 61° 40′ W., 180	5.8	5.9	4.6	42.34	43.32	44.36	78.5	—13.5
Winter	75	58	70	96	26	.153	.161	.165	.526	.042	10.582	N. 59° 2′ W., 277	6.4	6.0	4.6	25.82	27.23	27.95	60.4	—0.7
Spring	70	51	65	97	18	.235	.259	.255	.691	.023	11.113	N. 27° 25′ W., 123	6.4	6.1	5.1	35.85	37.48	37.94	68.3	—13.5
Summer . . .	74	53	71	95	31	.609	.608	.634	.975	.319	10.816	S. 82° 39′ W., 127	5.2	5.8	3.7	63.97	63.82	65.13	75.5	46.7
Autumn . . .	79	55	73	97	24	.327	.337	.353	.792	.090	8.592	N. 71° 43′ W., 233	5.2	5.3	4.4	44.55	44.88	46.76	72.3	16.1
For seven years.		58		100	16		.344		.975	.023	43.153	N. 73° 33′ W., 215					44.40		78.5	—13.5

TABLE I.—*Mortality for the year* 1858, *Collated from*

DISEASES.	FIRST QUARTER, Commencing January 2, 1858.									SECOND Commencing					
	Jan.		Feb.		March.		Adults.	Minors.	Total.	April.		May.		June.	
	M.	F.	M.	F.	M.	F.				M.	F.	M.	F.	M.	F.
Abscess	5	1	1	4	2	3	10	6	16	1	1	..	..	1	..
Albuminuria	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Aneurism	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Apoplexy	5	1	6	4	11	1	27	1	28	3	6	6	5	8	7
Asphyxia	..	..	..	..	..	..	..	..	..	..	1	4	1	2	..
Asthma	..	..	..	..	1	..	1	..	1	2	..	..	..	2	1
Cancer and scirrhus	2	7	1	6	3	6	23	2	25	1	6	3	8	4	9
Caries	..	1	..	..	..	..	..	1	1	..	..	..	..	..	..
Catarrh	4	1	..	..	4	3	..	12	12	2	3	2	2	..	1
Casualties	13	6	13	5	17	6	40	20	60	11	7	6	3	10	6
Burns and scalds	1	3	1	..	4	6	5	10	15	1	2	..	2	2	1
Drowned	6	..	3	1	4	..	13	1	14	8	2	12	..	16	..
Fracture	1	..	1	..	1	1	3	1	4	..	..	..	..	..	..
" of pelvis	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Poisoning	1	..	..	..	..	..	..	1	1	..	..	..	..	..	..
Suicide	2	..	1	..	2	5	9	1	10	1	..	..	2	2	..
Cholera infantum	..	1	..	..	2	..	..	3	3	2	1	4	1	32	29
" morbus	..	..	..	1	1	1	1	2	3	1	..	2	1	2	2
Cirrhosis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Childbed	..	..	..	1	..	..	1	..	1	..	..	..	..	..	..
Concussion of the brain	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
Congestion of the brain	11	11	6	6	5	5	14	30	44	8	10	11	3	15	11
" " liver	1	..	..	..	..	..	..	1	1	..	..	..	..	..	..
" " lungs	2	1	..	7	3	4	8	9	17	2	5	5	4	2	8
Consumption of the lungs	77	79	63	70	84	85	391	67	458	86	69	53	77	81	67
Convulsions	21	30	22	27	31	26	11	146	157	28	10	14	21	46	31
Croup	20	12	21	13	17	22	..	105	105	8	8	9	6	14	12
Cyanosis	4	1	2	..	1	2	..	10	10	2	1	..	2	4	2
Coup de soleil	..	..	..	..	..	..	..	..	..	..	..	..	..	20	3
Coxalgia	..	..	..	..	..	..	..	..	..	2	1	..	..	..	..
Constipation	..	..	..	..	..	1	1	..	1	..	..	..	..	..	..
Debility	15	23	17	17	28	20	76	44	120	15	20	19	14	12	8
Diabetes	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..
Diarrhœa	2	3	..	3	2	2	6	6	12	3	..	5	3	1	..
Disease of the bladder	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
" " brain	6	2	4	4	9	4	8	21	29	7	4	14	2	14	8
" " chest	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1
" " heart	5	11	8	11	14	12	36	25	61	9	4	8	9	13	11
" " liver	3	4	..	..	7	4	12	6	18	2	3	5	8	5	2
" " lungs	3	..	3	2	3	2	7	6	13	3	4	2	1	..	..
" " spine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
" " stomach and bowels	1	1	..	..	2	2	5	1	6	4	2	..	..	..	..
Dropsy	18	12	17	11	16	15	37	52	89	3	3	..	..	..	..
" of the brain	1	1	..	4	12	13	3	28	31	15	11	15	9	23	14
" " chest	..	..	..	..	3	3	6	..	6	7	7	8	10	4	4
" " heart	..	..	..	1	..	1	1	1	2	1	..	1	3	4	2
Dysentery	1	2	2	..	4	4	7	6	13	1	1	3	2	7	11
Dyspepsia	..	..	..	..	1	..	..	1	1	..	..	..	..	..	..
Effusion on the brain	6	2	3	3	3	3	2	18	20	2	2	3	..	3	2
Enlargement of the heart	..	..	..	1	..	1	..	2	2	..	..	..	1	..	..
Epilepsy	1	1	..	..	..	..	1	1	2	..	..	..	..	..	..
Erysipelas	2	3	4	4	5	8	17	9	26	3	2	2	2	4	4
Fever, bilious	..	1	1	..	1	2	5	..	5	..	..	..	1	2	..
" brain	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..
" congestive	1	..	..	..	..	..	..	1	1	..	..	..	..	..	..
" intermittent	..	1	..	1	..	..	1	1	2	..	..	..	..	..	..
" nervous	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
" puerperal	..	..	..	..	..	1	1	..	1	..	7	..	3	..	7
" remittent	..	..	1	1	..	..	1	1	2	..	1	1	1	..	..
" scarlet	21	21	18	20	19	21	1	119	120	9	18	18	9	6	8
" typhoid	8	3	9	10	14	7	33	18	51	5	8	3	4	4	5
" typhus	4	1	4	3	5	4	11	10	21	4	2	2	3	2	2
" " icterodes	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Gangrene	..	..	1	1	2	1	3	2	5	..	..	..	..	..	1
Gout	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hemorrhage	2	..	3	..	3	2	6	4	10	4	5	2	2	1	4
Hernia	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Hooping-cough	1	3	4	4	2	8	..	22	22	5	8	4	3	8	21
Hydrophobia	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..

Returns made to the Health Office. By WILSON JEWELL, M. D.

QUARTER, April 3, 1858.			THIRD QUARTER, Commencing July 3, 1858.									FOURTH QUARTER, Commencing October 2, 1858.									Total for the year.
			July.		Aug.		Sept.					Oct.		Nov.		Dec.					
Adults.	Minors.	Total.	M.	F.	M.	F.	M.	F.	Adults.	Minors.	Total.	M.	F.	M.	F.	M.	F.	Adults.	Minors.	Total.	
2	1	3	4	..	..	1	..	1	5	1	6	1	2	..	..	3	..	4	2	6	31
..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	1	1
..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	1	2	2
32	3	35	6	1	7	3	4	3	23	1	24	2	1	7	5	3	6	24	..	24	111
..	8	8	4	3	5	..	3	..	1	14	15	2	..	1	7	4	4	10	14	37	
5	..	5	..	1	1	..	..	1	2	1	3	1	..	..	..	2	3	..	3	12	
27	3	30	2	7	4	17	3	10	36	7	43	1	8	5	8	3	2	24	3	27	125
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
..	10	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	22
28	15	43	11	3	5	4	21	6	23	27	50	6	3	9	2	17	1	25	13	38	191
..	8	8	..	1	..	1	3	..	1	4	5	2	5	2	5	5	8	6	21	27	55
25	13	38	26	1	9	1	19	1	35	22	57	10	..	4	2	2	..	15	3	18	127
..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	1	5
1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
4	1	5	3	2	..	1	..	1	7	..	7	2	1	1	..	..	..	4	..	4	26
..	69	69	151	128	117	102	39	38	..	575	575	4	8	..	3	..	..	..	15	15	662
5	3	8	12	11	5	7	4	2	34	7	41	..	..	1	..	..	..	1	..	1	53
..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..	..	1
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
16	42	58	19	20	16	22	14	6	34	63	97	1	6	7	7	16	5	19	23	42	241
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
10	16	26	2	5	1	1	3	3	10	5	15	4	1	1	3	5	6	9	11	20	78
381	52	433	55	62	47	68	72	87	350	41	391	45	55	51	55	92	79	359	18	377	1659
10	140	150	30	48	23	25	28	18	14	158	172	23	25	24	16	20	22	8	122	130	609
1	56	57	7	3	5	8	6	4	1	32	33	13	9	22	11	20	22	..	97	97	292
1	10	11	..	..	1	2	2	1	..	6	6	4	2	..	1	3	2	..	12	12	39
22	1	23	3	..	..	..	..	..	2	1	3	..	..	..	..	..	..	..	..	..	26
2	1	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
51	37	88	20	22	24	12	38	17	60	73	133	12	14	20	13	27	29	55	61	116	457
2	..	2	1	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	3
6	6	12	32	23	19	13	8	9	24	80	104	3	1	1	2	3	..	7	3	10	138
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1	1
19	30	49	7	6	6	5	10	1	11	24	35	4	..	5	2	5	5	12	9	21	134
3	..	3	..	1	..	..	..	1	1	1	2	1	2	..	..	1	2	5	1	6	11
40	14	54	9	6	8	10	12	5	34	16	50	4	5	10	11	10	10	40	10	50	215
19	6	25	..	..	3	3	3	2	8	3	11	2	2	3	2	3	2	12	2	14	68
4	6	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	23
..	..	..	1	..	1	..	1	..	1	2	3	..	..	..	1	..	1	..	2	2	5
4	2	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	12
4	2	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	95
4	83	87	21	17	19	19	9	7	2	90	92	10	8	7	7	7	12	6	45	51	261
36	4	40	4	9	7	6	8	9	37	6	43	5	7	9	6	11	13	50	1	51	140
10	1	11	2	2	1	2	2	1	8	2	10	1	..	1	1	1	..	4	..	4	27
8	17	25	33	28	43	41	23	18	53	133	186	2	3	1	3	4	3	7	9	16	240
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
4	8	12	9	3	4	4	1	5	5	21	26	2	3	3	2	3	1	5	9	14	72
..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
12	5	17	2	1	2	2	4	..	4	7	11	3	..	..	..	1	..	2	2	4	58
3	..	3	4	1	7	5	6	1	18	6	24	3	4	2	1	1	..	9	2	11	43
..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
15	2	17	..	6	..	5	..	2	11	2	13	..	2	..	..	..	3	5	..	5	36
..	3	3	..	..	..	..	2	3	2	3	5	1	1	3	2	..	6	1	7	17	
4	64	68	4	3	4	4	..	5	1	19	20	7	7	3	3	7	6	2	31	33	241
21	8	29	7	3	13	9	15	10	35	22	57	14	9	7	5	14	11	46	14	60	197
10	5	15	5	4	3	1	2	4	14	5	19	1	3	2	1	5	4	13	3	16	71
..	..	..	..	..	7	2	4	3	14	2	16	..	..	..	..	..	..	..	..	..	16
..	1	1	..	..	1	..	3	2	1	8	9	..	..	..	1	..	..	..	1	1	16
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1	1
14	4	18	3	1	2	1	3	4	9	5	14	1	3	1	3	1	3	7	5	12	54
..	1	1	..	..	..	..	..	..	..	..	..	1	..	1	1	..	1	3	1	4	5
..	49	49	7	8	15	13	5	11	1	58	59	5	5	2	6	2	3	..	23	23	153
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1

TABLE I.—*Mortality*

DISEASES.	FIRST QUARTER, Commencing January 2, 1858.									SECOND Commencing					
	Jan.		Feb.		March.		Adults.	Minors.	Total.	April.		May.		June.	
	M.	F.	M.	F.	M.	F.				M.	F.	M.	F.	M.	F.
Icterus	..	2	3	..	..	1	3	3	6	2	..	..	1	..	..
Inanition	3	4	1	3	3	7	3	18	21	4	2	4	1	6	3
Inflammation of the bladder	1	..	..	1	..	..	1	1	2	1	..	..	..	..	..
" " brain	16	11	13	8	16	8	19	53	72	22	5	9	6	16	14
" " bronchi	3	5	2	5	5	4	11	13	24	5	7	3	3	7	5
" " chest	..	..	1	..	..	..	..	1	1	..	..	..	..	..	..
" " heart	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
" " kidneys	1	..	1	..	..	..	2	..	2	..	1	..	..	..	..
" " liver	..	1	4	3	..	..	7	1	8	1	..	..	..	3	2
" " lungs	18	6	34	15	30	31	48	86	134	25	16	28	24	29	25
" " peritoneum	1	..	..	3	..	4	5	3	8	3	6	3	2	3	4
" " pleura	..	1	..	1	..	..	2	..	2	..	..	..	..	..	..
" " stomach & bowels	5	7	8	7	12	10	24	25	49	5	12	10	10	17	12
" " throat	..	..	..	..	2	..	..	2	2	2	2	..	..	..	..
Intemperance	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..
Intussusception	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Malformation	1	..	..	..	..	..	..	1	1	..	..	..	..	..	..
Mania	..	..	..	1	..	..	1	..	1	..	1	1	..	..	..
Mania à potu	7	..	4	2	6	2	..	..	21	4	..	3	2	10	1
Marasmus	10	8	16	12	21	13	3	77	80	20	17	18	8	27	20
Measles	..	..	..	1	..	..	..	1	1	..	1	..	2	2	2
Mortification	..	..	..	..	1	3	..	4	4	..	1	..	..	1	1
Obstruction of the bowels	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..
Old age	3	8	7	14	9	15	56	..	56	18	17	18	19	20	30
Osteo-sarcoma	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
Neuralgia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Palsy	2	1	7	5	4	5	24	..	24	4	2	3	2	8	4
Purpura	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rheumatism	2	2	..	..	4	4	10	2	12	5	6	1	..	1	..
Scrofula	1	1	1	3	7	4	9	8	17	1	..	3	3	2	3
Smallpox	..	..	..	..	1	..	1	..	1	..	..	1	..	1	1
Softening of the brain	..	..	..	..	1	..	1	..	1	1	..	..	1	..	..
Sore throat	1	1	1	1	..	..	..	4	4	..	..	..	..	..	..
Stillborn	31	11	32	22	31	25	..	152	152	25	19	24	15	31	20
Syphilis	..	..	1	..	..	..	..	1	1	..	..	..	1	..	1
Tabes mesenterica	1	3	1	3	5	4	1	16	17	2	1	..	2	1	2
Teething	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Tetanus	..	..	..	..	1	..	1	..	1	1	1	..	..	2	..
Tumours	..	..	..	..	..	1	1	..	1	..	1	1	1	..	1
Strangury	2	1	1	..	1	1	1	5	6	..	2	..	..	..	..
Ulceration	..	..	..	1	..	..	1	..	1	..	..	..	..	..	..
Unknown	6	7	8	2	17	8	32	16	48	10	5	10	7	13	7
Worms	..	..	1	..	..	..	..	1	1	..	..	1	..	..	..
Uremia	..	..	..	..	..	..	..	..	..	..	..	2	1	..	..
Totals of the sex	392	330	387	359	526	467	1133	1328	2461	437	371	390	342	580	464
Monthly totals	722		746		993		..	..	..	808		732		1044	
From the almshouse	39		43		54		..	..	..	49		61		79	
From the country	..		3		..		..	..	..	8		5		13	
People of colour	39		65		61		..	..	..	71		42		72	

for 1858—Continued.

QUARTER, April 3, 1858.			THIRD QUARTER, Commencing July 3, 1858.									FOURTH QUARTER, Commencing October 2, 1858.									Total for the year.
Adults.	Minors.	Total.	July.		Aug.		Sept.		Adults.	Minors.	Total.	Oct.		Nov.		Dec.		Adults.	Minors.	Total.	
			M.	F.	M	F.	M.	F.				M.	F.	M.	F.	M.	F.				
2	1	3	..	..	2	1	..	..	1	2	3	1	..	..	2	..	1	2	2	4	16
6	14	20	8	3	10	4	5	4	4	30	34	..	3	1	4	5	3	..	16	16	91
1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
13	59	72	29	14	23	14	21	13	11	103	114	3	8	14	8	12	12	14	43	57	315
7	23	30	2	6	2	3	5	6	11	13	24	4	2	1	6	2	7	14	8	22	100
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
1	..	1	..	..	..	..	1	1	2	..	2	..	2	..	..	..	1	1	1	2	7
6	..	6	2	2	1	1	3	3	9	3	12	..	..	..	1	1	2	4	..	4	30
42	105	147	23	17	19	22	21	12	15	99	114	18	16	23	20	52	38	36	131	167	562
13	8	21	4	2	3	3	..	3	12	3	15	1	1	1	1	4	3	7	4	11	55
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
33	33	66	23	17	12	11	17	24	52	52	104	4	10	4	7	16	13	40	14	54	273
..	4	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6
1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
..	..	..	..	..	..	..	..	..	1	1	1	..	..	..	..	..	..	..	..	..	1
..	..	..	1	..	..	..	..	..	..	1	1	..	..	1	..	..	..	1	..	1	2
2	..	2	2	..	..	..	1	..	5	..	5	..	..	..	..	..	..	..	..	..	2
20	..	20	7	..	9	3	10	2	30	1	31	..	..	..	1	..	..	1	..	1	9
11	99	110	31	31	55	45	29	24	11	204	215	3	1	5	1	3	..	13	..	13	85
..	7	7	2	3	4	2	..	..	1	10	11	12	10	7	7	14	8	8	50	58	463
1	2	3	..	..	1	..	..	..	1	..	1	..	1	4	..	3	1	..	9	9	28
1	1	2	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	1	1	2	10
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
122	..	122	19	22	12	12	15	18	98	..	98	7	12	12	13	11	27	82	..	82	358
..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	1	1	1
22	1	23	5	5	5	3	6	2	25	1	26	7	4	2	5	6	8	31	1	32	105
..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	1	1
10	3	13	1	..	..	1	1	1	2	2	4	2	..	1	1	..	1	4	1	5	34
3	9	12	4	3	3	..	6	2	6	12	18	2	..	..	3	1	1	..	7	7	54
1	2	3	..	..	1	1	1	..	..	3	3	..	..	..	..	..	..	..	..	..	7
2	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4
..	134	134	18	15	18	12	27	24	..	114	114	25	17	24	20	23	26	..	135	135	535
1	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
1	7	8	4	7	3	1	4	4	2	21	23	1	..	3	2	2	..	..	8	8	56
..	1	1	1	1	2	2	2	2	..	10	10	..	..	1	..	..	..	..	1	1	12
1	3	4	1	..	2	2	1	..	4	2	6	1	..	..	..	1	..	1	1	2	13
4	..	4	..	1	..	..	..	4	4	1	5	..	..	..	..	..	..	..	..	..	10
1	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
34	18	52	12	13	8	6	9	7	31	24	55	6	4	5	3	7	3	18	10	28	183
..	1	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	1	3
3	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
1233	1351	2584	708	602	630	571	566	459	1272	2264	3536	303	299	327	298	467	422	1086	1030	2116	10697
..	..	..	1310		1201		1025		..	..	..	602		625		889		..	..	..	..
..	..	..	58		58		51		..	..	..	30		24		27		..	..	..	573
..	..	..	9		1		6		..	..	..	3		1		3		..	..	..	52
..	..	..	70		50		46		..	..	..	31		26		38		..	..	..	611

TABLE I.—*Mortality for* 1858—Continued.

	FIRST QUARTER, Commencing January 2, 1858.						SECOND QUARTER, Commencing April 3, 1858.					
	Jan.	Feb.	March.	Adults.	Minors.	Totals.	April.	May.	June.	Adults.	Minors.	Totals.
Under 1 year	194	186	248	..	..	628	199	193	303	..	..	695
From 1 to 2 years	116	96	113	..	..	325	85	57	105	..	..	247
" 2 to 5 "	38	56	89	..	..	183	66	60	99	..	..	225
" 5 to 10 "	22	23	39	..	..	84	31	16	28	..	..	75
" 10 to 15 "	13	11	14	..	..	38	13	11	9	..	..	33
" 15 to 20 "	18	26	27	..	..	71	23	21	31	..	..	75
" 20 to 30 "	89	77	112	..	..	278	87	92	102	..	..	281
" 30 to 40 "	68	92	90	..	..	250	75	72	100	..	..	247
" 40 to 50 "	48	48	68	..	..	164	64	59	76	..	..	199
" 50 to 60 "	35	35	61	..	..	131	44	44	56	..	..	144
" 60 to 70 "	35	45	49	..	..	129	52	47	56	..	..	155
" 70 to 80 "	31	28	49	..	..	108	43	35	39	..	..	117
" 80 to 90 "	14	20	22	..	..	56	22	23	33	..	..	78
" 90 to 100 "	1	2	11	..	..	14	4	2	7	..	..	13
" 100 to 110 "	..	1	1	..	..	2	..	..	..	..	..	..
Total of monthly mortality	722	746	993	..	..	..	808	732	1044	..	..	..
Total males for the quarter	..	..	..	..	..	1305	..	..	..	..	..	1407
" females "	..	..	..	..	..	1156	..	..	..	..	..	1177
" adults "	..	..	..	1133	..	..	..	..	..	1233	..	..
" minors "	..	..	..	..	1328	..	..	..	..	..	1351	..
" for the quarter	..	..	..	..	..	2461	..	..	..	..	..	2584

	THIRD QUARTER, Commencing July 3, 1858.						FOURTH QUARTER, Commencing October 2, 1858.					
	July.	Aug.	Sept.	Adults.	Minors.	Totals.	Oct.	Nov.	Dec.	Adults.	Minors.	Totals.
Under 1 year	584	516	305	..	..	1405	173	174	231	..	..	578
From 1 to 2 years	145	156	116	..	..	417	51	55	78	..	..	184
" 2 to 5 "	95	69	61	..	..	225	40	51	68	..	..	159
" 5 to 10 "	28	17	16	..	..	61	12	9	15	..	..	36
" 10 to 15 "	22	19	18	..	..	59	13	5	13	..	..	31
" 15 to 20 "	22	40	36	..	..	98	11	10	27	..	..	48
" 20 to 30 "	99	95	119	..	..	313	65	76	94	..	..	235
" 30 to 40 "	81	57	99	..	..	237	68	62	87	..	..	217
" 40 to 50 "	59	74	81	..	..	214	54	46	80	..	..	180
" 50 to 60 "	57	52	62	..	..	171	47	38	67	..	..	152
" 60 to 70 "	49	45	39	..	..	133	31	45	37	..	..	113
" 70 to 80 "	43	37	45	..	..	125	20	33	53	..	..	106
" 80 to 90 "	20	22	22	..	..	64	10	11	31	..	..	52
" 90 to 100 "	5	1	5	..	..	11	7	8	8	..	..	23
" 100 to 110 "	1	1	1	..	..	3	..	1	..	..	..	1
" 110 to 120 "	..	..	..	..	..	..	..	1	..	..	..	1
Total of monthly mortality	1310	1201	1025	..	..	..	602	625	889	..	..	..
Total males for the quarter	..	..	..	..	..	1906	..	..	..	..	..	1097
" females "	..	..	..	..	..	1630	..	..	..	..	..	1019
" adults "	..	..	..	1272	..	..	..	..	..	1086	..	..
" minors "	..	..	..	..	2264	..	..	..	..	..	1030	..
" for the quarter	..	..	..	..	..	3536	..	..	..	..	..	2116

TABLE II.—*Mortality from Diseases of the Lungs and Air-passages.*

DISEASES.	ANNUAL AGGREGATES.			QUARTERS OF 1858.			
	1856.	1857.	1858.	1st.	2d.	3d.	4th.
Abscess, pulmonary	1	...	...	...	...	...	...
Angina pectoris	5	1	...	...	...	...	...
Apnœa	1	...	...	...	...	...	...
Asphyxia	28	15	37	...	8	15	14
Asthma	21	33	12	1	5	3	3
Catarrh	...	33	22	12	10	...	...
Collapse of lungs	1	...	...	...	...	...	...
Congestion of the lungs	97	132	78	17	26	15	20
Consumption, laryngeal	1	...	...	...	...	...	...
" of the lungs	1501	1544	1659	458	433	391	377
Croup	268	256	292	105	57	33	97
Disease of the chest	6	7	11	...	3	2	6
" lungs	37	53	23	13	10	...	...
Dropsy of the chest	61	48	140	6	40	43	51
Effusion on the chest	7	3	...	...	...	...	...
" lungs	4	4	...	...	...	...	...
Emphysema	2	1	...	...	...	...	...
Empyema	2	1	...	...	...	...	...
Gangrene of the lungs	...	1	...	...	...	...	...
Hemorrhage from the lungs	28	18	...	...	...	...	...
Influenza	2	9	...	...	...	...	...
Inflammation of the bronchi	250	179	100	24	30	24	22
" " chest	7	16	1	1	...	...	...
" " larynx	34	14	...	...	...	...	...
" " lungs	379	504	562	134	147	114	167
" " pleura	16	27	2	2	...	...	...
" " trachea	9	11	...	...	...	...	...
Ulceration of larynx	2	...	...	...	...	...	...
Totals	2770	2910	2939	773	769	640	757
Hooping-cough	77	51	153	22	49	59	23
Totals	2847	2961	3092	795	818	699	780
Total mortality, exclusive of stillborn	11722	10338	10162				
Per cent. from diseases of the lungs	22.77	28.13	30.43				
Per cent. from consumption of the lungs	12.80	14.93	16.33				

TABLE III.—*Deaths from Consumption of the Lungs, during each Month in the year* 1858, *at fourteen distinct periods of life, with the Sexes designated for each month.*

AGES.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Under 1 year . . .	3	2	...	2	1	1	...	...	...	...	...	...	9
From 1 to 2 years . .	7	2	3	2	...	...	...	...	...	...	...	...	14
" 2 to 5 " . .	...	1	3	3	2	1	...	...	...	...	...	...	10
" 5 to 10 " . .	4	1	5	2	1	3	1	1	...	...	...	...	18
" 10 to 15 " . .	3	1	1	3	3	1	3	2	1	...	...	...	18
" 15 to 20 " . .	6	16	9	11	5	11	3	19	11	6	2	10	109
" 20 to 30 " . .	45	48	58	43	50	52	41	31	64	27	45	50	554
" 30 to 40 " . .	34	33	38	39	31	37	25	26	37	32	22	44	398
" 40 to 50 " . .	25	11	15	25	19	25	16	20	18	11	15	26	226
" 50 to 60 " . .	13	9	18	14	9	12	17	12	17	15	9	25	170
" 60 to 70 " . .	10	8	16	7	9	3	7	4	7	3	12	9	95
" 70 to 80 " . .	6	1	2	3	...	2	3	...	3	1	1	5	27
" 80 to 90 " . .	...	...	1	1	...	...	1	...	1	3	...	2	9
" 90 to 100 " . .	...	...	...	...	...	...	...	...	...	2	...	...	2
" 100 to 110 " . .	...	...	...	...	...	...	...	...	...	...	...	...	...
Male	77	63	84	86	53	81	55	47	72	45	51	92	806
Female	79	70	85	69	77	67	62	68	87	55	55	79	853
Monthly totals . . .	156	133	169	155	130	148	117	115	159	100	106	171	1659
Quarterly totals . . .		458			433			391			377		1659

Table IV.—*Mortality from Diseases of the Nervous System.*

DISEASES.	Annual Aggregates.			Quarters of 1858.			
	1856.	1857.	1858.	1st.	2d.	3d.	4th.
Abscess of the brain	2	...	...	...	...	...	...
Apoplexy	123	115	111	28	35	24	24
Chorea	2	1	...	...	...	...	...
Catalepsy	1	...	...	...	...	...	...
Coma	2	1	...	...	...	...	...
Compression of the brain	8	...	...	...	...	...	...
Concussion of the brain	...	7	1	...	1	...	...
Congestion of the brain	177	201	241	44	58	97	42
Convulsions	603	556	609	157	150	172	130
Coup de soleil	2	6	26	...	23	3	...
Cramp	11	10	...	...	...	...	...
Disease of the brain	107	100	134	29	49	35	21
Dropsy of the brain	242	173	261	31	87	92	51
Effusion of the brain	94	92	72	20	12	26	14
Epilepsy	24	18	2	2	...	...	...
Hysteria	3	...	...	...	...	...	...
Inflammation of the brain	329	306	315	72	72	114	57
" " tympanum	...	...	...	...	...	...	...
Irritation of brain and spinal marrow	...	...	...	...	...	...	...
Mania or insanity	12	7	9	1	2	5	1
Mania à potu	43	62	85	21	20	31	13
Neuralgia	1	...	1	...	...	...	1
Palsy	104	92	105	24	23	26	32
Softening of the brain	40	14	3	1	2	...	...
" " spinal marrow	2	...	...	...	...	...	...
Teething	29	17	12	...	1	10	1
Tetanus	13	11	13	1	4	6	2
Trismus	2	2	...	...	...	...	...
Totals	1976	1791	2000	431	539	641	389
Puerperal convulsions	2	1	...	...	...	...	...
" mania	...	...	...	...	...	...	...
Totals	1978	1792	2000	431	539	641	389
Total mortality, exclusive of stillborn	11722	10338	10162				
Per cent. of total mortality	16.87	17.33	19.58				

TABLE V.—*Mortality from Diseases of the Organs of Nutrition.*

DISEASES.	ANNUAL AGGREGATES.			QUARTERS OF 1858.			
	1856.	1857.	1858.	1st.	2d.	3d.	4th.
Abscess	40	35	31	16	3	6	6
" abdominal	...	...	...	...	...	...	...
" of the liver	1	1	...	...	...	...	...
Cancer of the stomach and bowels	4	7	...	...	...	...	...
Cholera	16	3	...	...	...	...	...
" infantum	722	534	662	3	69	575	15
" morbus	35	10	53	3	8	41	1
Cirrhosis of the liver	6	3	...	...	...	...	...
Colic	17	7	...	...	...	...	...
Constipation	3	...	1	1	...	...	...
Consumption of the bowels	3	5	...	...	...	...	...
Diarrhœa	149	119	138	12	12	104	10
Disease of the liver	27	41	68	18	25	11	14
" stomach and bowels	27	17	12	6	6	...	...
Dropsy	213	239	95	89	6	...	...
" abdominal	8	6	...	...	...	...	...
Dysentery	301	198	240	13	25	186	16
Dyspepsia	...	2	1	1	...	...	...
Gout	7	5	1	...	...	...	1
Icterus	21	11	16	6	3	3	4
Ileus	1	...	...	...	...	...	...
Inflammation of the liver	39	25	30	8	6	12	4
" " peritoneum	68	56	55	8	21	15	11
" " stomach and bowels	184	299	273	49	66	104	54
Intussusception	6	4	2	...	...	1	1
Marasmus	484	506	463	80	110	215	58
Obstruction of the bowels	9	2	2	...	2	...	...
Scrofula	61	51	54	17	12	18	7
Tabes mesenterica	36	44	56	17	8	23	8
Tuberculosis	...	...	...	...	...	6	...
Ulceration of the stomach and bowels	15	6	...	...	...	...	...
Totals	2503	2236	2253	347	382	1314	210
Total mortality, exclusive of stillborn	11722	10338	10162				
Per cent. of total mortality	21.35	21.62	22.17				

TABLE VI.—*Mortality from Diseases of the Urino-Genital Organs.*

DISEASES.	ANNUAL AGGREGATES.			QUARTERS OF 1858.			
	1856.	1857.	1858.	1st.	2d.	3d.	4th.
Albuminuria	9	7	1	...	...	...	1
Amenorrhœa	2	...	...	...	...	...	...
Cancer of mamma	2	...	...	...	...	...	...
" uterus	5	4	...	...	...	...	...
Childbed	2	7	1	1	...	...	...
Chlorosis	2	1	...	...	...	...	...
Convulsions, puerperal	2	1	...	...	...	...	...
Diabetes	...	7	3	...	2	1	...
Disease of the bladder	1	1	1	...	...	...	1
" kidneys	16	8	...	...	...	...	...
" ovaries	1	2	...	...	...	...	...
" prostate gland	1	...	...	...	...	...	...
" uterus	5	2	...	...	...	...	...
Dropsy, ovarian	1	...	...	...	...	...	...
Fever, puerperal	69	49	36	1	17	13	5
Hemorrhage from uterus	7	5	...	...	...	...	...
Inflammation of the bladder	8	9	3	2	1	...	...
" " kidneys	7	7	7	2	1	2	2
" " prostate gland	...	...	...	...	...	...	...
" " uterus	15	8	...	...	...	...	...
Mania, puerperal	...	...	...	...	...	...	...
Rupture of the bladder	...	...	...	...	...	...	...
" urethra	...	1	...	...	...	...	...
" uterus	...	...	...	...	...	...	...
Stone in bladder	...	...	...	...	...	...	...
Strangury	...	...	8	6	2	...	...
Suppression of urine	...	3	...	...	...	...	...
Syphilis	5	2	3	1	2	...	...
Tumour, ovarian	1	1	...	...	...	...	...
Ulceration of the uterus	...	1	...	...	...	...	...
Totals	161	126	63	13	25	16	9
Total mortality, exclusive of stillborn	11722	10338	10162				
Per cent. of total mortality	1.37	1.21	0.62				

TABLE VII.—*Mortality from Fevers.*

DISEASES.	ANNUAL AGGREGATES.			QUARTERS OF 1858.			
	1856.	1857.	1858.	1st.	2d.	3d.	4th.
Fever	10	3	...	...	...	...	...
" bilious	24	25	43	5	3	24	11
" cerebral	...	2	1	...	1	...	...
" congestive	3	5	1	1	...	...	...
" continued	...	2	...	...	...	...	...
" enteric	...	2	...	...	...	...	...
" gastric	2	4	...	...	...	...	...
" hectic	2	2	...	...	...	...	...
" intermittent	14	5	2	2	...	...	...
" malignant	...	...	...	...	...	...	...
" nervous	7	9	1	...	1	...	...
" pernicious	...	...	...	...	...	...	...
" puerperal	69	49	36	1	17	13	5
" remittent	22	23	17	2	3	5	7
" scarlet	992	704	241	120	68	20	33
" typhoid	229	175	197	51	29	57	60
" typhus	49	38	71	21	15	19	16
" " icterodes	5	...	16	...	...	16	...
" yellow	...	...	...	...	...	...	...
Totals	1428	1048	626	203	137	154	132
Total mortality, exclusive of stillborn	11722	10338	10162				
Per cent. of total mortality	12.18	10.13	6.16				

TABLE VIII.—*Mortality from Measles.*

DISEASES.	ANNUAL AGGREGATES.			QUARTERS OF 1858.			
	1856.	1857.	1858.	1st.	2d.	3d.	4th.
Measles	141	56	28	1	7	11	9

TABLE IX.—*Causes assigned for Death where the number is* 90 *and upward.*

DISEASES.	ANNUAL AGGREGATES.			QUARTERS OF 1858.			
	1856.	1857.	1858.	1st.	2d.	3d.	4th.
Apoplexy	123	115	111	28	35	24	24
Casualties	158	118	191	60	43	50	38
Cholera infantum	722	534	662	3	69	575	15
Consumption of the lungs	1501	1544	1659	458	433	391	377
Congestion of the brain	177	201	241	44	58	97	42
" " lungs	97	132	...	...	...	...	...
Convulsions	603	556	609	157	150	172	130
Croup	268	256	292	105	57	33	97
Debility	430	378	457	120	88	133	116
Diarrhœa	149	119	138	12	12	104	10
Disease of the brain	107	100	134	29	49	35	21
" heart	179	222	215	61	54	50	50
Dropsy	213	239	95	89	6	...	...
" of the brain	242	173	261	31	87	92	51
Dysentery	301	198	240	13	25	186	16
Effusion on the brain	94	92	...	...	...	...	...
Erysipelas	100	95	...	...	...	...	...
Fever, scarlet	992	704	241	120	68	20	33
" typhoid	229	175	197	51	29	57	60
Hooping-cough	...	...	153	22	49	59	23
Inanition	114	...	91	21	20	34	16
Inflammation of the brain	329	306	315	72	72	114	57
" " bronchi	250	179	100	24	30	24	22
" " lungs	379	504	562	134	147	114	167
" " stomach and bowels	184	299	174	49	66	104	54
Marasmus	484	506	463	80	110	215	58
Measles	141	...	...	...	...	...	...
Old age	172	195	358	56	122	98	82
Palsy	104	92	105	24	23	26	32
Smallpox	390	...	...	...	...	...	...
Stillborn	612	557	535	152	134	114	135
Unknown	257	291	183	48	52	55	28
Drowned	105	134	127	14	38	57	18

TABLE X.—*Deaths, with the Sexes, for each Month in the Year, and the Number at Sixteen Distinct Periods of Life, with the Percentages to Total Mortality, Exclusive of the Stillborn—also the Stillborn Children for each Month, and their Sexes.*

Months.	Stillborn.			Males.	Females.	Boys.	Girls.	Under 1 year.	1 to 2.	2 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	110 to 120.	Total.
	M.	F.	Total.																					
January	31	11	42	392	330	228	173	194	116	38	22	13	18	89	68	48	35	35	31	14	1	...	...	722
February	32	22	54	387	359	208	190	186	96	56	23	11	26	77	92	48	35	45	28	20	2	1	...	746
March	31	25	56	526	467	282	248	248	113	89	39	14	27	112	90	68	61	49	49	22	11	1	...	993
April	25	19	44	437	371	218	199	199	85	66	31	13	23	87	75	64	44	52	43	22	4	...	...	808
May	24	15	39	390	342	214	144	193	57	60	16	11	21	92	72	59	44	47	35	23	2	...	...	732
June	31	20	51	580	464	322	253	303	105	99	28	9	31	102	100	76	56	56	39	33	7	...	...	1044
July	18	15	33	708	602	486	410	584	145	95	28	22	22	99	81	59	57	49	43	20	5	1	...	1310
August	18	12	30	632	569	443	374	516	156	69	17	19	40	95	57	74	52	45	37	22	1	1	...	1201
September	27	24	51	566	459	305	247	305	116	61	16	18	36	119	99	81	62	39	45	22	5	1	...	1025
October	25	17	42	303	299	151	149	173	51	40	12	13	11	65	68	54	47	31	20	10	7	...	...	602
November	24	20	44	327	298	160	144	174	55	51	9	5	10	76	62	46	38	45	33	11	8	1	1	625
December	23	26	49	468	421	229	203	231	78	68	15	13	27	94	87	80	67	37	53	31	8	...	...	889
Totals	309	226	535	5716	4981	3246	2734	3306	1173	792	256	161	292	1107	951	757	598	530	456	250	61	6	1	10697
Per ct. of totals				53.45	46.55	30.35	25.62	37.25	11.54	7.78	2.52	1.57	2.86	10.89	9.35	7.45	5.88	5.21	4.48	2.46	0.60	.05	.009	

Table I. The whole number of deaths returned for the year has been 10,697. This amount indicates a falling off of 201, or nearly 2 per cent., from the deaths of 1857. Fixing the population at 600,000, which, I believe, is a fair estimate, the death returns furnish a favourable indication of the health of our city, and give one death to every 56 of its inhabitants.

Of the deaths recorded, 5,715 were males and 4,982 females, presenting an excess of deaths in the male sex equivalent to 14.70 per cent. For the last ten years the mortality records of Philadelphia give an excess of male deaths equal to 15.58 per cent. The average of deaths for each quarter of the year is 2,674; for each month $891\frac{5}{12}$; for every day $29\frac{1}{3}$.

According to the seasons of the year, so are the rates of death determined for each quarter. The first quarter furnished 2,461, the second 2,584, the third 3,536, and the fourth 2,116. The second or spring quarter yielded an increase of 5 per cent. over those of the first quarter, embracing two of the winter months. The third quarter, which rates the highest in mortality, and includes the summer and autumn in part, gave 36.76 per cent. more than the second quarter, and 43.60 per cent. than the first quarter. The fourth or last quarter, in which the deaths were reduced to 2,116, showed a decrease of 40.15 per cent. from those in the third. A large proportion of the increase of mortality in the third quarter may be safely charged to the diseases of the organs of nutrition, embracing many of the zymotic class.

Appended to this table will be found the number of deaths returned from the almshouse, or Blockley Hospital; they amount to 573. Also the mortality among the coloured population, which was 611. The number of interments in the city burial-grounds of bodies brought from other counties and States amounted to 52. I make these statements from the record, but their accuracy is very doubtful. From a more reliable source I learn that while there has been an annual increase of the inmates of the Blockley Almshouse—our great pauper establishment—the rate of mortality shows a reduction from 21.89 per cent. in 1854 to 14.50 per cent. in 1858.

In order to arrive at a safer estimate of the deaths from diseases alone, it seems proper to deduct those in the table registered under external causes, as well as those from debility, malformation, old age, unknown causes, stillborn, and those from the country, amounting in all to 1,967, or 18 per cent. of the whole. By this calculation we reduce the deaths from certified diseases to 8,730. Taking this as the correct standard of deaths from disease during the year, and it gives us only 1 death in every 67 of the population.

Table II. presents the deaths returned to the health office from those diseases to which the lungs and air-passages are liable. They amount to 3,092,

or 30.43 per cent. of the entire number of deaths for the year.[1] This percentage is higher by 2.30 per cent. than the preceding year, and shows an increase of deaths from this class over any former year, in proportion to the annual mortality.

The deaths from croup have increased 14 per cent. over those for 1857, and amount to 292, or 9.44 per cent. of the mortality from diseases of the air-passages. The deaths in the first and fourth quarters, which include the winter months, more than double those for the second and third quarters of the year. The steady increase of croup, according to the tables of mortality for this city, cannot have escaped the attention of the Fellows of the College. It is one of those diseases peculiar to childhood, and most prevalent between the ages of one and five years; it is not often met with in early infancy, although during this year 110 of the deaths were under one year of age. Boys are said to be more liable to croup than girls, according to the known statistics of writers. The present year fully confirms this opinion. 160 of the deaths were boys and 130 girls, showing an increase of 23½ per cent. of the former over the latter. The distinct character of the disease causing death, whether pseudo-membranous or catarrhal croup, is rarely designated in the certificate, and hence it is impossible to ascertain the comparative mortality of the two forms of this frequent and too often fatal disease among children. A more complete system of classification of diseases, as well as of registration of deaths, would, if practically carried out, supply a necessary want in our mortality statistics of this as well as other diseases.

The deaths from dropsy of the chest present an increase of 191.73 per cent. above those recorded for 1857. This augmentation will be found to belong to the last half of the year, and occurred principally among adults. The cause in all probability may be looked for in the unusual prevalence of inflammatory affections of the bronchial passages and lungs, the result of a catarrhal epidemic influence in the atmosphere.

This catarrhal disease furnished 140 deaths, or 4.52 per cent. of the mortality assigned to this class.

Inflammation of the lungs contributed 562, or 18 per cent., of the deaths in this table, and inflammation of the bronchia 100, or 3 per cent. Only two deaths are ascribed to inflammation of the pleura, one to inflammation of the chest, none to that of the larynx or trachea. This is an unusual occurrence.

Hooping-cough will be seen to have supplied more deaths than for the two previous years combined, viz., 153, an increase of 200 per cent. over those for 1857.

The extreme prevalence of catarrhal diseases in our city during the last

[1] It will be understood that the calculations in these tables having reference to the entire mortality are prepared by excluding the stillborn, unless otherwise expressed.

four months of the year, amounting almost to an epidemic influenza, may in some degree account for the increase of deaths as indicated in the table.

Table III. In this table I have set apart the deaths from consumption of the lungs which have been recorded during the year. I have also designated the sexes, and have shown the total of deaths for every decennial period.

The annual mortality from this dreaded scourge of the human family is placed at 1,659. Of this number, 806 were males and 853 females; the excess of deaths among females is peculiar to all mortality tables in all places. In the present instance it was equal to about 6 per cent.

The deaths from this disease contribute more than half of those classed with diseases of the lungs and air-passages, while they furnish 16.33 per cent. of the total mortality.

The increase of the deaths from consumption above those for 1857 is equal to 7.45 per cent.

Estimating the population at 600,000, the ratio of deaths to population was as 1 to every 361.66, or 2.76 in every thousand.

According to this table, and it does not differ materially from others that I have prepared for this region, the decennial period in which the deaths from consumption of the lungs are most frequent is that between 20 and 30 years. The next in frequency is between 30 and 40. This result would confirm the opinions of Sir James Clark and of Louis on this point.

There is no period of life, however, even from infancy (which interesting season is thought to be very prolific of consumption) down to extreme old age, in which there will not be found recorded, deaths from the ravages of this hereditary pestilence. In the accompanying table you will find 9 deaths under 1 year, and 2 over 90 years; while the intervening periods gave larger proportions, marking a gradual increase up to 30 years, when they as gradually declined.

The highest monthly mortality was in December, 171; the next March, 169; the next September, 159. October and November furnish the lowest number—100 in the former, and 106 in the latter.

Table IV. contains the numerical estimate of the deaths during the year from diseases appertaining to the nervous system. They amount to 1,990, or 19.58 per cent. of the entire mortality.

Under the separate titles of convulsions and congestion, dropsy, inflammation, and disease of the brain, will be found 1,560 deaths. These diseases belong peculiarly to children, and we may safely infer that 78 per cent. of the deaths from affections of the nervous system are contributed by our infantile population.

Convulsions, by itself, gives a large proportion, equal to 609, or 6 per cent.

Twenty-six deaths are noticed from coup de soleil, or sunstroke. Twenty-three of the deaths occurred in June, and of these, twenty-one were in the last week of the month; during this term, the thermometer stood at its highest point for the year, 96½ on the 28th. These deaths were the result of the extreme heat of the season.

The deaths from mania-à-potu were 85, an increase of 37 per cent. above those for 1857, and a larger annual mortality than for several years back.

Table V. enumerates the deaths for the year from diseases peculiar to the organs of nutrition, amounting to 2,253, and equal to 22.17 per cent. of the entire mortality.

Under this head is placed cholera infantum, a summer disease of infancy, confined principally to the crowded suburbs and badly-ventilated districts of our large cities and towns. The third quarter of the year, embracing July, August, and September, together with the month of June, furnishes almost the entire mortality. The whole number for the year was 662, equivalent to about 14 per cent. of the deaths for the year, in children under five years of age.

Marasmus (?).—Under this term will be found 463 deaths; the months of June, July, August, and September furnishing 262 of this number. This also is one of those diseases—or, more properly, results of disease—peculiar to children, and found prevailing extensively in large cities during the warm season. It seems to be a favourite name with many physicians, and an easy mode of certifying to deaths of a chronic form in children where doubt exists in the mind as to the real nature of the case. I believe it to be the sequel of several varieties of disease of the organs of nutrition in children; and, with that understanding, the numerous deaths ascribed to marasmus obviously belong to those affections, and are placed to their account.

The third quarter of the year, which includes almost the entire warm season, contributes a large portion of the deaths under this head. It will be seen, also, that the increase is from those affections which are generally classified with the zymotic or epidemic. The entire number for the quarter is 1,314, constituting 58 per cent. of the deaths in this class; while the epidemic diseases alone, in the quarter, are 1,093, or 48 per cent.

Table VI. Here will be found the deaths assigned to those diseases which belong to the kidneys, bladder, and the organs of generation. They consist, this year, of a limited percentage when compared with the whole mortality. There is a falling off of one-half from those of last year; they number 63. Of these, puerperal fever deaths make 36, or more than half. In 1857 the largest proportion of deaths from this fever were in the first quarter, the coldest period of the year. This year, almost the entire mortality was in warm weather.

Table VII. The mortality from fevers during 1858 is shown in this table.

A comparison with the fever table of 1857 is the best evidence of the exemption of our city in 1858 from the destructive influence of this class of diseases upon its citizens. The former year they numbered 1,048, in the latter 626, presenting a decrease equal to 40 per cent. In 1856 the proportion of deaths from fevers to the entire mortality was 1 in 8; this year (1858) they are only 1 in 16.

This great difference is explained in part by the falling off in the deaths from scarlet fever. In the two years preceding 1858 they amounted to 1,696; during this year they were only 241.

To the entire mortality, fever deaths rate only 6 per cent.

Typhoid and typhus fevers have increased in the number of their deaths since 1857 at the rate of 25 per cent.

If the record of deaths be considered a fair index, our city has been peculiarly exempt from the ordinary forms of autumnal fevers. The few cases I have observed invariably partook of a mild type, and were easily managed. Intermittent fever and its varieties, considered as of miasmatic origin, which were exceedingly prevalent, a few years ago, in the urban as well as in the suburban districts during the fall months, were neither fatal nor numerous. It has been remarked that this more common type of fever seemed to be gradually disappearing from our vicinity as an endemic, or to be yielding in form to those of an asthenic character, as the typhoid or enteric.

After an experience of thirty-four years, and a somewhat familiar acquaintance with the endemics of the county, I have never known the outer districts of our city to have enjoyed a larger share of health than during the past year, especially as regards the ravages from fever. The common bilious fevers have been few in number; and when found, their active inflammatory type was doubtful, and features were presented, which corresponded with those above alluded to, of an enteric character.

One of the local causes of this comparative immunity of the suburban districts of the city from miasmatic fevers, in addition to the meteorological or climatic changes may be found, especially during the past two years, in the almost entire suspension of those rapid and extensive improvements which for years have been in progress along the outskirts of the city. In the prosecution of these changes, streets were opened and graded, which required the digging down of embankments and the filling up of excavations; the removal of earth was needed also from cellars dug for new buildings, and in the levelling of lots.

The great amount of loose and new earth, thus exposed to the influence of heat and moisture, and the decomposition of vegetable remains contained therein, in connection with numerous collections of stagnant water, could not do otherwise than give rise to the exhalation of malaria, which, with other causes, highly favoured the appearance and extensive prevalence

of fevers. When the money panic of 1857 swept over the country, our city experienced its prostrating influence; business suddenly declined, property depreciated in value, building improvements at once ceased, and with these reversions an abatement of miasmatic fevers followed.

Sixteen deaths are recorded from typhus icterodes. As far as I could obtain correct information, these deaths were from undoubted cases of yellow fever. They all occurred in the months of August and September.

About the middle of July there was considerable anxiety in the community, in consequence of the arrival and detention at quarantine of a number of vessels from ports in the West Indies, where yellow fever was prevailing at the time of their sailing. Several of these vessels had cases of the fever on board in a most malignant form, when they dropped their anchors opposite the lazaretto. They received a visit from the physician at the station, Dr. L. S. Filbert, and the sick were immediately removed to the hospital. Other vessels had lost several of their seamen with yellow fever on the voyage, at sea, or in foreign ports, while others again arrived with their crews in health, having had no sickness during the voyage, but were detained for purification. In a few days, cases of yellow fever were received into the hospital from some of these vessels.

Every sanitary precaution was strictly observed by the officers at the station, to prevent the spread of the disease among the crews of the fleet riding quarantine, and to preserve the health of those persons remaining on board the infected vessels. These were moored at some distance north and east of the others, which were detained, not on account of sickness, nor because they came from infected ports, but because it was according to law.

Dr. Filbert received into the hospital from time to time, in all, twenty-seven cases of yellow fever. Four of these died; two within ten hours after admission. Two of the four had black vomit. This was a mortality of only fourteen per cent. to cases, and shows a result more favourable than is usual. The treatment followed by the doctor in these cases he has had the kindness to forward me, which I herewith transcribe in his own words.

"The treatment, which I am happy to say has proved very successful in my hands, was as follows: As soon as the patients (except the two who arrived in a dying condition) were received into the hospital, I had them immersed in a hot mustard-bath, after which, upon being wiped dry, they were put to bed, well covered with blankets, and bottles of hot water placed around their bodies and lower extremities, with the intention of producing diaphoresis. Entire rest in the recumbent position was strictly enjoined, and maintained throughout the treatment. As early as possible I administered the following remedies: ℞.—Hydr. chlor. mit. gr. vj; sulph. quin. gr. v; pulv. nitr. potas. gr. v; pulv. ipecac. gr. $\frac{1}{3}$. This prescription was repeated every three hours. The treatment had the desired effect of

producing copious perspiration. In from three to four days the fever abated.

"My object was to give a sufficient amount of calomel to move the bowels without the addition of other purgatives, at the same time to lay a mercurial foundation at the start. It may not be out of place to say, that in no instance did my patient give me trouble where mercurial action could be produced in due time. In those cases where there was much gastric distress, I applied mustard to the epigastric region. Ice was allowed, as much as the patient desired."

The great solicitude felt by the lazaretto physician, for a faithful discharge of his duties under the trying circumstances in which he found himself placed, and his unremitted attention to the sick, were calculated to depress the energies of his nervous system; while his frequent visits to the infected ships from day to day, in order that those left on board might have his protection, exposed him to the influence of a poisoned atmosphere, and he contracted the fever, which proved to be a mild case. He convalesced on the sixth or seventh day of his sickness.

Unfortunately two infected vessels escaped the vigilance of the officers at the lazaretto, and either evaded the laws or the restrictions of the Board of Health, or else through a misunderstanding, had received permits to leave and thus found their way to the city, where they discharged their cargoes and their crews. In a few days after their arrival, several cases of yellow fever made their appearance among the persons employed about these vessels, and in the vicinity of their moorings.

It has not been possible to ascertain the true number or exact locality of cases of yellow fever that were under treatment during its limited appearance in our city. The Board of Health, as I learn, preserved no record of the cases reported to them, and, besides, there were instances of the disease that never came to their knowledge.

From the most reliable information, there were between thirty and thirty-five cases. A number of them occurred in the vicinity of South and Front Streets. Several were in Kensington; while a few were under treatment in one or two of our public hospitals. Many of these cases could be traced to direct communication with the atmosphere of the vessels that had reached our wharves, coming directly from yellow fever ports, without having undergone quarantine; while with others no satisfactory information could be obtained as to the origin of the disease.

Twenty-five of these cases of fever were under the care of Dr. John Gegan, of South Front Street. His first case occurred two days after the arrival of the first vessel at Lombard Street wharf, in a baker, residing in Lombard Street near Front, who told the doctor he had been about the wharf for several days previous to his sickness. Five of the cases under the care of Dr. Gegan died—a mortality of twenty per cent. All of his

cases, with the exception of the night inspector of one of the above infected vessels, were in houses east of Second and south of Lombard Streets.

It becomes, therefore, a difficult question to decide upon the origin of these cases of yellow fever. Were they the offspring of a foreign poison, introduced by vessels from the West Indies, or are they to be regarded as the production of domestic causes? Were they the result of epidemic or endemic influences? That they were of sporadic or accidental origin, will, perhaps, be admitted. That the disease neither lasted until a frost should banish it from our midst, nor spread to any extent, are facts well known. The hygrometrical and the thermometrical conditions of the atmosphere were by no means favourable to its production, or administered to its extension; hence, the activity of the cause, whatever it might be, was soon exhausted for the want of these and other propitious circumstances.

The extensive prevalence of scarlet fever in our city for a number of years past, the fearful ravages it has committed by death in that portion of the population which, of all others, is the most interesting while it is the most cherished, and the increased attention that has been bestowed upon it of late by writers on medicine, would seem to claim for it, at our hands, rather more than an ordinary notice.

For this purpose I have taken the trouble to compile, from the mortality records, the following table, which gives us the deaths from scarlet fever in our city for a period of twenty-eight years, from 1831 to 1858, inclusive, with the ages and sexes for each decennial period:—

YEARS.	Males.	Females.	Boys.	Girls.	Under 1 year.	1 to 2.	2 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	Total.
From 1831 to 1840, ten years	968	1036	945	1010	181	353	915	433	58	15	25	14	4	6	..	..	2004
" 1841 to 1850, ten "	1267	1318	1255	1284	249	461	1216	545	52	16	26	12	6	2	..	..	2585
" 1851 to 1858, eight "	1740	1735	1712	1707	329	687	1574	722	82	25	33	17	4	..	1	1	3475
	3975	4089	3912	4001	759	1501	3705	1700	192	56	84	43	14	8	1	1	8064

During the twenty-three years preceding 1831, beginning with 1807, when the first annual statement of deaths in our city was published by the Board of Health—as prior to this event we have no authentic account of the mortality—there were only 162 deaths from scarlet fever. Within this interval of time there was a series of years, from 1812 to 1818, that a death from scarlet fever was unknown to the record; and from 1807 until 1812, only 13 deaths are to be found on the register.

In 1830 the deaths increased to 40, from 9 the previous year, and from the following year, 1831, when, as the above table indicates, they run up to 200, we may date the advent of this wide-spread and severe exanthe-

matous fever. Not only has it prevailed extensively, and with marked fatality, but during each successive decennial period it has steadily increased, provided the increased ratio of deaths be taken as the index of its prevalence.

All writers agree that no period is fixed for the duration of scarlet fever when it makes its appearance in an epidemic form, and it would not be an assumption of authority to assert, that the past twenty-eight years have proved a memorable epidemic cycle, especially when contrasted with the preceding period of twenty-three years, during which term only 162 deaths from this disease were returned out of 56,000 deaths. It has been conjectured by Dr. Emerson that in the period of exemption referred to, there may have been deaths from scarlet fever reported under the title of sore throat, which in all probability was the case. Making every allowance, however, for the 355 additional deaths thus recorded, it would not, in my opinion, change the proportional mortality between the two periods—since the like conjecture, for the returns of deaths from scarlet fever during the epidemic visitation, by other and vague terms, would far exceed those of the former period.

A careful inspection of the table will reveal several points of interest involved in the history and character of this dreaded malady. That it is a disease of infancy and childhood, scarce a doubt need be entertained. Of the 8,064 deaths which have occurred in this city since 1831, 7,665, or 95 per cent. were under ten years of age. Of the deaths recorded beyond 20 years, or in adult life, there were 151, not quite 2 per cent. Eight of these were between 50 and 60, one between 60 and 70, and one between 70 and 80 years of age, proving that the disease may attack the aged and terminate fatally.

Some diversity of opinion has been expressed as to the influence of scarlet fever upon the sexes. While one author decides that girls are more liable to it than boys, another claims the influence for the boys; while a third believes that under puberty, sex exerts no influence whatever, but beyond that age it is most frequently found among females.

It may be thought impossible, with our present imperfect and limited means of observation, to decide correctly this question. Should it never be settled, it is not one of vital importance. Nevertheless, I am of opinion that females are more subject to the disease than boys. The evidence for this opinion will be found in the accompanying table, unless it can be satisfactorily shown that the result there given of the excess of female deaths, was occasioned by a less resistance to a fatal termination of the disease, owing to their greater delicacy of conformation.

Of the deaths recorded in this table, 4,089 were females, and 3,975 were males, presenting an excess equal to 3 per cent. of female deaths over those in the male sex. This result, while it may conflict with the estimate of a

number of able writers, is in accordance with the experience and decision of the Registrar-General of England.

Table VIII. For several years a separate table has been prepared for measles, smallpox, and varioloid. The falling off in the deaths from smallpox and varioloid since 1855 has rendered a distinct notice unnecessary. Only seven deaths are registered from smallpox during the entire year, and of these victims, five were children. Not a death took place from varioloid. For measles the table has been continued, although it might with propriety be dispensed with, in the present instance, as the deaths from this exanthem have reached only 28 during the year. No epidemic of measles has prevailed, and the few isolated cases which made their appearance were generally mild in character. The last two quarters of the year show an increase in the deaths, the disease no doubt having been complicated with catarrhal inflammations, which were quite prevalent.

Table IX. In this group are those only, in which the deaths have exceeded ninety for the year.

A glance at the table will indicate a change in favour of 1858, as to its comparative health, with the results of the previous years appended thereto.

Consumption of the lungs produces the highest mortality. Cholera infantum is the next in the scale.

Disease of the heart, which in all probability stands for a variety of distinct morbid affections, the true diagnosis of which has either been overlooked through indifference, or waived in the absence of a knowledge of exploration according to modern investigations, numbers 215 of the entire mortality from diseases of the organs of circulation, which were 248.

The remarkable increase of deaths from old age, seen in this table, numbering 358, when compared with those in former years, will not escape attention. They more than double the number for either 1855 or 1856, and nearly double those for 1857. I shall not attempt any explanation, as it may be purely an accidental occurrence, although it might serve as an argument in favour of an approximation towards a higher average of human life in our city.

Table X. This is a useful table for the statistician. It presents at first sight an analysis of the annual mortality, numerically arranged. The stillborn, with the sexes for each month, are given. The deaths per month at each of the fifteen distinct periods of life, with the sexes, and the number of boys and girls under twenty years of age, are also enumerated. A calculation of percentages of deaths for each month to the whole number has been prepared, as well as for the several designated periods of life, all of which will be found available in making up comparative tables.

The stillborn children amounted to 535, which would be equal to 5 per cent. of the entire mortality for the year. This is a more favourable comparison than was presented last year, or for the seven previous years. The male stillborn exceeded the female by 36.72 per cent. This fact of the excess of stillborn males is noticed in the statistics of other cities.

The largest number of stillborn occurred in March—viz., 56; the lowest in August—viz., 30. The coldest months yielded the greatest amount of stillborn children.[1]

The mortality in children, or those deaths which have occurred before the twentieth year of life,[2] exclusive of stillborn, were 5,443, and make up 53.38 per cent. of the deaths. Those under one year, deducting the stillborn, amounted to 2,767, equivalent to 27.25 per cent. of the mortality, and constitute more than half of all the deaths under twenty years.

The deaths under five years amounted to 4,731, or 46.40 per cent. of the annual mortality. Between five years and twenty they were less than 7 per cent.

The mortality in infancy and childhood in our city will compare favourably with that of other large cities; still, the large number of deaths at these interesting periods of life demand a far greater share of attention from the medical profession and the corporate authorities than they now receive. It is a fact, and cannot be denied, that the prevalent causes for this heavy mortality in early life are preventable. The improper hygienic management of children, with regard to their diet, dress, exercise, and air, together with a neglect by the civil authorities of the enforcement of sanitary police measures, are mainly the agents that lay the foundation for the existence of infantile diseases, and thus invite this early harvest of death.

In adult life, that decade between 20 and 30 gave the highest mortality; it was equal to 10.89 per cent. The deaths beyond this period gradually declined, up to extreme old age. Two hundred and fifty deaths, or 2.46 per cent., took place in the decennial period between 80 and 90, sixty-one between 90 and 100, and seven died in their centennial term, one of whom was beyond 110 years.

The proportion of deaths in advanced life, when compared with the total mortality, and with the like proportion in former statistics, shows that the probabilities of life have been increased during the year. In the previous year (1857), although the mortality was greater in amount than this year, yet the aggregate ages were only 221,327 years, which made the duration of life 20⅓ years; whereas this year (1858) the sum of the ages amounted to 238,585, which would increase the average existence of life to 23½ years.

[1] No estimate can be formed of the number of stillborn to the births in our city, as the Board of Health have failed in securing the birth statistics for several years.

[2] In the tables these deaths are classified as minors, and those above twenty as adults.

Adhesive Plaster in maintaining Counter-extension in the Treatment of Oblique Fractures of the Lower Extremity.—Dr. GILBERT read the following paper on the use of adhesive plaster in maintaining counter-extension in the treatment of oblique fractures of the thigh and of the leg:—

From the time of Hippocrates to the present these fractures have occupied the mind of the profession to a greater extent perhaps than any other; yet surgeons of the largest experience, who occupy the most prominent positions in the profession, have told us, and even now tell us, that a large majority of the cases of fracture of the femur result in shortening and permanent lameness. John Bell said: "The machine is not yet invented by which a fractured thigh can be perfectly recovered." Benj. Bell said: "An effectual method of securing oblique fractures of the thigh-bone is perhaps one of the greatest desiderata in modern surgery." Ferguson says: "The fractured thigh is almost invariably shorter than its fellow." Chelius says: "Fractures of the thigh are always difficult of cure. There is most commonly deformity and shortening of the limb." With these views his learned British and American editors fully agree. Malgaigne says, in the work recently translated by Dr. J. H. Packard of this city: "When the two ends cannot be made to oppose one another to counteract the muscular contractions, it is impossible to preserve the normal length of the limb, whatever may be the apparatus or method employed." Again: "When the fragments remain in contact, or when we can replace them and keep them so by means of their serrations, it is easy to cure a fracture of the femur without shortening; in the absence of these two conditions the thing is simply impossible." Dr. V. Mott, of New York, testified, in a trial for malpractice, a few years ago, that "more or less shortening of the limb is uniformly the result after fractured thigh, even under the most favourable circumstances;" and Drs. Parker, Post, Cheeseman, and others, sustained the same view in their testimony. Dr. F. H. Hamilton, of Buffalo, N. Y., after furnishing the most interesting and reliable statistics of the results of the treatment of this fracture on record, says: "I declare, in the most positive manner, that I have never obtained like results [such as claimed by those who profess to have made perfect cures] either in the use of my own apparatus or with that of others." To this almost any amount of corroborative testimony might be added.

A full history of all the contrivances invented and used in the mechanical treatment of this fracture, if written, would constitute a large volume, every page of which would impress the mind of the reader with the fact that the treatment of this lesion is surrounded by difficulties of the gravest character.

The retentive apparatus of the ancients consisted of bandages of cerecloth and some rude attempts in the use of splints and fracture-boxes, in the straight position, depending entirely upon lateral pressure for the maintenance of the fragments in apposition. Percival Pott, who wrote after the middle of the eighteenth century, was the first to recommend the bent

posture of the fractured limb. His object was to relax the muscles, and thus obviate their mischievous effects in causing shortening. He laid the limb in carved angular splints, and placed the patient upon his injured side, resting the sound limb upon the fractured one. Dupuytren, Astley Cooper, Chas. Bell, and others, improved upon this by introducing the double inclined plane, and placing the patient upon his back, thus using the body to keep up counter-extension by its weight. Desault had previously adopted the straight method, adding a long outside splint, with extending and counter-extending bandages. These two general methods, viz., the angular and the straight, have been varied in every conceivable manner by practitioners of all countries, each projector of a new plan supposing that a great improvement had been achieved, only, however, to be superseded by the modification of some other surgeon. At present it is conceded pretty generally, that, in the greatest number of cases, the extended plan, using an outside splint long enough to reach up nearly to the axilla, meets all the indications most satisfactorily. As in most of our surgical procedures, the simplicity and constant availability of this plan constitute the measure of its value. The common apparatus is composed of a long splint, having a block projecting inwards six or eight inches below the sole of the foot; extending and counter-extending bandages; cotton batting, or junk bags, and common roller. Short splints may or may not be used. In the use of this all the muscles are equally relaxed, and their contractions are controlled more effectually by the extending and counter-extending forces employed than by any other method in ordinary use. Although all the indications *seem* to be met by this simple apparatus, yet statistics abundantly prove that many failures occur in practice. This failure of complete success by the straight method has long been attributed by surgical writers to a want of coincidence between the line of counter-extension and the axis of the limb and body. To remedy this, various modifications in the application of the counter-extending power have been proposed, and alterations made, in the several forms of apparatus. Dr. Physick improved upon the plan of Desault by extending the outside splint to the axilla, which, as will appear presently, was a real improvement. Van Houte attached a bar of wood, which projected at right angles from the upper end of the splint, and extended to the middle of the lower part of the abdomen. To this the counter-extending bandage was fastened so as to make traction in a line coinciding directly with the axis of the body. Volpe added an inner splint, and joined this to the inner extremity of the cross-piece, as a further improvement. Others, since then, have been influenced by the same idea in constructing their apparatus, some of whom abut the upper extremity of a long inside splint against the tuber ischii.

It ought to be borne in mind, however, that in a well-formed lower extremity the inner condyles of the thigh-bones come together at the knees; whilst the trochanters, by the interposition of the pelvis and the necks and

heads of the thigh-bones, are about twelve inches asunder. The shafts of the tibiæ are usually parallel with each other, and their axes, when extended upwards, coincide very nearly with the axis of the trunk. The axis of the femur, however, which diverges from the knee upwards and outwards, forms an angle with the general line of the axis of the leg and body. The application of the counter-extending power, therefore, to coincide with the axis of the femur, should be made from the perineum upwards and outwards, and not in a line directly upwards. It is very evident, then, that Dr. Physick's modification of Desault's apparatus disposes of the extending and counter-extending forces in a manner which insures their coincidence with the axes of the thigh and leg more accurately than any other plan yet proposed, and is decidedly the most useful so long as loose or unadherent bandages are used for counter-extension. The extending power exerted directly downwards, coinciding with the axis of the leg, and the counter-extending power upwards and outwards, coinciding with the axis of the femur, as nearly as may be, will exert their influence in controlling the muscular contractions more effectually, and in retaining the fragments in apposition more accurately, than if the two forces acted in a line with the axis of the trunk. The salient angle formed by the axes of the femur and tibia, where they meet at the knee, is concealed by the arrangement of the muscular mass placed at the upper and inner part of the femur. The inequalities of the external contour of the limb are filled up by the wadding, or junk bags, so that the splint supports the whole extremity firmly, although extension and counter-extension are not in the same line with each other.

Why, it may then be asked, are there so many imperfect cures, even by the use of this most approved method in the hands of the most skilful? Why are limbs shorter, and patients lame for life, when we possess an apparatus which appears to meet so fully and clearly every indication as a means of retention after reduction and coaptation of the broken bone? These questions may be answered more satisfactorily after we consider briefly some of the anatomical elements which are involved in this lesion.

The femur is the largest bone of the skeleton. It is simple in its outline, and well defined in all its parts. It constitutes the upper half of the column upon which the body reposes, and, at the same time, is one of the chief agents through which all the movements of the body are performed. These diverse functions of absolute rest and free motion are provided for by the form and position of the bone. The gentle forward arching of the shaft, the neck and head diverging from this at nearly a right angle, and the salient inclination of the entire bone downwards and inwards from the sides of the pelvis, admirably fit it for the extensive and varied movements which it is destined to perform; whilst its strong cylindrical body, terminating at each extremity in large processes, forming its base and capital, fits it equally well to perform the office of a column for the support of the

trunk. The muscles appropriated to the thigh-bones are remarkable for their number, size, diverse traction, and far-reaching attachments, upwards above the pelvis, and downwards to the foot. When we consider the fact that these, in their aggregate, comprise nearly, if not fully, one-half of the muscular mass of the entire system, the magnitude of their power in steadying and moving the bone becomes very apparent. Between the bone and these muscles, during their integrity, there is the most accurate adaptation of function, and the most perfect harmony of action.

When, however, fracture in any part of the continuity of the former, takes place, all this beautiful symmetry of form and reciprocity of action is destroyed. The contractions of this most voluminous and energetic of all the muscular combinations in the system are powerfully and continually exerted in effecting derangement of the fragments, and disturbing their quiet apposition. In view of these anatomical and physiological facts, we ought not to be surprised, then, that the experience of all the world forces upon us the conviction that these powerful muscular contractions are not sufficiently controlled, to make cures without shortening, by the provision of any apparatus hitherto in use for counter-extension. I admit that all desirable and necessary power is at our command through the use of any of the most approved modifications of apparatus on the extended plan; but its tension cannot be endured by the patient long enough, at the seat of counter-extension, to secure union without deformity. When well adjusted, the limb is restored to its normal length, and the patient feels quite comfortable for a time. To the eye of the observer every indication appears to be fully met; but the loose counter-extending bandage, or the crutch-head of the inner splint, no matter how wide a surface they were made to occupy when first applied, will narrow down under the powerful contractions of the muscles, the pressure will become intensely concentrated over the bony points of the pelvis underlying the line of their application, and insupportable pain will be the consequence. In a large proportion of cases, in which the patient resolves to indure the pain, abrasion, excoriation, and even sloughing, will be produced by these counter-extending means, no matter how soft the cushion or unirritating the materials of which they are composed. It is a well-authenticated fact that Gen. Lafayette owed his lameness to excoriation and deep-seated ulceration produced in his perineum and groin by the counter-extending means used in the treatment of his fracture. He doubtless obeyed the orders of his surgeon not to disturb the apparatus, and endured his sufferings like a soldier, regardless of consequences. There are very few patients, however, so obedient. Malgaigne prefers the apparatus of Boyer; yet, in his opinion, in oblique fractures even this "cannot restore the limb to its normal length," in proof of which he cites a case in which "extension was kept up steadily until the forty-eighth day, when it had to be abandoned on account of the *deep ulcerations about the ankle and groin.*" He explains by asserting that the power used to counteract mus-

cular action "causes pressure or constriction in proportion to the resisting force of the muscles," which, he says, "rarely fails to cause acute pain, excoriations, blisters, or even sloughs." Hence the infinite variety in the form and composition of the perineal band; in the fashioning of the upper extremity of the inner splint, by which counter-extension is made against the perineum; in the method of treating by the flexed position, with or without weights and cords passing over pulleys; and, finally, in the application of dextrine or starch; all with the same intention of saving the perineum and groin from the effects of pressure and friction. It would require more space than can well be appropriated in this communication to describe the numerous plans proposed for the defence of the perineum. To defend this part has been a principal desideratum with surgeons, and has, more than any other consideration, led to the endless modification of apparatus in the treatment of this fracture. Ordinarily, it is found, at the first visit after any of the forms of retentive apparatus in use has been adjusted, that the patient or his friends have slackened the counter-extending means, or are anxiously waiting for the surgeon to do it. In most of the cases this has to be done, and the seats of pressure and friction bathed with spirits, and soft materials interposed, so as, if possible, to relieve the pain and prevent abrasion. The same round of efforts, to abate suffering and ward off injury, must be repeated from time to time; in the meanwhile there is no constantly acting force sufficiently powerful to overcome muscular contraction, and, finally, union of overlapping bones takes place. To restrain patients in their efforts to loosen the counter-extending means, various plans have been proposed. Amongst the most recent, Dr. John Neill proposes the union of the extending and counter-extending bands outside of the long splint, partly for this purpose; and Dr. J. F. Flagg, of Boston, suggests that a padlock be put on the buckle of the counter-extending band whenever the patient persists in undoing it.

After encountering difficulties of this character during a practice of eighteen years, in the treatment of fractures of the thigh, the very favourable impression made upon my mind by the use of adhesive plaster in keeping up *extension* without pain, led me to a determination to use it for *counter-extension* as soon as an opportunity offered. This presented itself very soon afterwards in a case of so complicated a character as to afford a very fair test of the value of the plan. *This first case in which adhesive plaster was used as a means of counter-extension*, may be found recorded in the January number of the *American Journal of the Medical Sciences* for 1851. Since then I have used it in every case of fracture, not only of the thigh but of the *leg*, for counter-extension, as well as extension, with the happiest results. In the January number of the same journal for 1858 a number of cases of fracture of both thigh and leg, selected from my general practice, will be found published; in all of which it is shown most conclusively that any amount of force necessary to overcome muscular con-

traction, may be used without causing pain or excoriation at the seats of its application. This may be explained in the following manner: The adhesive plaster counter-extending bands become firmly adherent to a large extent of integument, consequently there can be no friction upon its surface; and through this extensive union with the skin, *pressure is widely and evenly diffused.* In the use of any of the ordinary unattached counter-extending means, the extent of surface occupied at the seat of pressure does not exceed eight square inches; a fractional part only of which sustains its greatest intensity, viz: that which overlies the tuber ischii, the edge of its ascending ramus, and a narrow space of the body of the pubis. The extent of surface to which the adhesive plaster counter-extending bands are attached, on the other hand, amounts to about one hundred square inches, over all of which the tension and pressure are equally distributed. In the use of the former, all the tissues lying upon the points of bone mentioned endure constant pressure, amounting often to constriction; in the use of the latter, through the elasticity of the skin, and the extensive distribution of the tractive power, pressure is slight and painless. In the use of the former, friction is produced continually by the movements of the body or limb; in the use of the latter, friction is impossible. The former glides over the surface, and acts as a ligature; the latter being adherent, cannot act thus. The former does not fix the pelvis; the latter holds it firmly, and keeps all the parts steady from the chest to the foot. The former requires the daily attention of the surgeon, to relieve suffering and prevent abrasion; the latter requires no such attention, unless the bands lose their attachment, which ordinarily does not occur more than once during the whole period of treatment. In short, by the adhesive counter-extending bands pressure is completely neutralized, friction cannot occur so long as they remain adherent, perfect quietude of the fragments is maintained; the union, consequently, requires less time, and less attention from the surgeon, and the patient is entirely free from the annoyance and suffering inseparable from the ordinary methods, no matter how great the power used to overcome the muscular contractions, or how protracted the period required for union in complicated cases.

Adhesive plaster has been used for years as a means of keeping up *extension.* Dr. F. H. Hamilton, in his report to the American Medical Association, *vide Transactions* for 1857, says: "The adhesive plaster bands are beyond all comparison the best means of making permanent extension which are at present known to surgeons. Hitherto one of the most serious difficulties in the way of extension, and the objection which has been most effectively urged against its adoption, has been the excoriations, ulcerations, and even sloughing, which so often occurred from the use of the various extending bands about the ankle. This, together with the injuries occasionally inflicted by the *perineal band,* has been regarded as a sufficient reason for preferring the flexed position. But no one who

has employed the adhesive plaster extending bands will doubt that so far as injuries to the foot and ankle are concerned, this objection is entirely disposed of." Again, he says: "I regard this simple invention, therefore, as one of the most important improvements in the treatment of fractures of the thigh."

An experience of eleven years, by this method, in the treatment of fractures of the thigh and leg, warrants me in asserting most positively that adhesive plaster as a means of making and keeping up *counter-extension*, is no less valuable, than it is here regarded by Dr. Hamilton, as a means of making and keeping up *extension*. The same difficulties arising from pressure and friction, viz., "excoriation, ulceration, and even sloughing" of the perineum and groin, are encountered when any of the unattached means are used, and are as certainly prevented when adhesive plaster is applied instead. The cases already alluded to, published in the January numbers of the *American Journal of the Medical Sciences* for 1851 and 1858, are a part of this experience, and fully sustain all that is here assumed.

In these cases it is shown that the most seriously complicated, compound, and comminuted single and double fractures in adults, children, and infants were treated without pain at the seat of counter-extension; and that the cures were perfected in unusually short periods of time. In some of the cases, adhesive plaster bands were used instead of the common roller and many-tailed bandage, with great advantage. Although the anterior and posterior counter-extending bands are usually quite sufficient, yet any additional amount of adhesive plaster may be applied in order to diffuse the tractive force still more widely. The pelvis may be fixed by girding it with a broad horizontal band, from which any desirable amount of counter-extending power may be commanded, by strips extending from it anteriorly and posteriorly to the upper extremity of the splint. Thus the perineum, if any injury there should render it necessary, may be left free and unencumbered. Since the publication of these cases the plan has been adopted by several private practitioners, who have informed me that their success has been equally gratifying. Amongst these, Dr. Kerr, of York, Pa., recently treated a case of severely comminuted compound fracture of the thigh with the happiest results. It has also been used at the Episcopal Hospital of this city in several cases, by Dr. Kenderdine, one of the surgeons of that institution, who informed me that the results have been so favourable that hereafter the plan will be preferred by him to every other. Dr. Hunt, one of the surgeons of the same institution, informs me that he has a case now under treatment, in which adhesive plaster is being used for counter-extension.[1]

[1] *March 1st.* Dr. Hunt says: "This case has now been under treatment for six weeks. It has progressed favourably, in every respect. The patient has experienced no pain from pressure, abrasion or excoriation, at the seats of extension

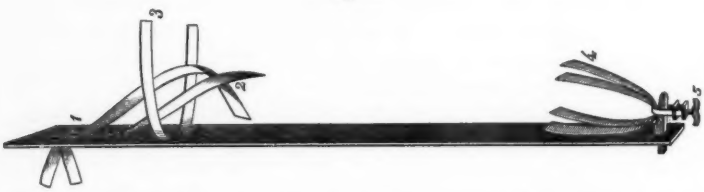
As additional confirmation of the value of the practice the following cases, also of unusual character, are submitted:—

1. I was sent for, January 21, 1858, to take charge of Mrs. J. Van Gunton, aged sixty-six years, residing at No. 1206 Alder Street above Girard Avenue, who, it was stated, had fallen from the flat roof of a one story back building, and fractured her left thigh bone. When I arrived at the residence of the patient, I was informed by her son, Mr. F. Van Gunton, that the accident had occurred *seven weeks previously*, and that an "eclectic doctor" had had charge of the case and treated her from the time of the receipt of the injury to the present time. As retentive means the "doctor" had used two long narrow splints, the outer one extending from the trochanter, and the inner from the perineum, to the foot. These were bound to the limb, after supposed reduction of the fracture, by a roller. No other effort was made to keep up extension and counter-extension except with this lateral pressure. On the day when I was sent for he had removed this retentive apparatus, and informed the patient and her friends that union had taken place. It soon became evident, however, not only that union had not resulted, but that *the thigh was fractured in two places*. For these mistakes in diagnosis and treatment he was discharged. On examination, I found an oblique fracture at the union of the upper with the middle third of the femur, and another in the lower third, immediately above the condyles. From the increased breadth of the bone at the condyles, and the existing inflammation in the knee-joint, I had no doubt of the existence of vertical fracture between the condyles; but this could not then be certainly detected. The whole limb was swollen and shortened. After making as much traction with the hands, assisted by her son, as the patient could then endure, the leg was still three and a half inches shorter than the sound one. I learned that the patient, previous to the accident, had enjoyed uninterrupted good health for years; in consequence, however, of the protracted confinement, and her sufferings from inflammation and fever, she had become greatly reduced. I applied the retentive apparatus described in the publication of my first case, using adhesive plaster for extension and counter-extension. In this case, however, which required an increased amount of power to overcome the permanent shortening as well as the active contractions of the muscles, I used double adhesive bands, which were fused together by passing them over a heated surface. I also added a horizontal strip which encircled more than half of the pelvis, immediately below the crista ilii, for the purpose of more securely binding the

and counter-extension, at any time. The adhesive strips used for counter-extension have been renewed but once since their first application. This became necessary, in consequence of the want of firmness of the plaster cloth; it would, therefore, be better if this consisted of linen, or some other unyielding material." The fusion of two layers of plaster, as used in the case of Mrs. Van Gunton and others, remedies this defect almost entirely.—D. G.

counter-extending bands to the surface, and increasing the extent of attachment of the counter-extending means. That the manner of applying the adhesive bands may be fully understood, I here furnish a drawing of the apparatus. This conveys a more accurate idea of the plan than mere description. The wadding, the roller for the leg, and the many-tailed bandage for the thigh, are omitted.

Fig. 3.



1. Anterior and posterior counter-extending adhesive bands, two and a half inches wide, crossing each other before they pass through the mortise holes. 2. The same, crossing at the upper part of thigh and perineum. 3. Horizontal pelvic band, which may be three inches wide. 4. Extending bands, receiving strap of tourniquet in the hollow of the foot. 5. Tourniquet.

Having adjusted the apparatus, extension and counter-extension were made by the *tourniquet*, and were increased from day to day until the fractured limb was brought very nearly to the length of the sound one. The tension necessary to overcome the shortening and muscular resistance was, from the peculiar nature of this case, unusually great, *yet no pain was complained of at the seats of extension or counter-extension.* One of the peculiar advantages of the use of adhesive plaster for these purposes is that the extent of its attachment may be increased, if necessary, until the whole pelvis is encased. My experience, however, has satisfied me that the amount of surface covered by the bands, as represented in this drawing, is sufficient to keep the muscular contractions under easy and full control until union takes place in the most unpromising cases.

The patient was placed upon a fracture-bed (I do not remember who first contrived it), which was constructed a few hours afterwards in the neighbourhood. I have found this bed a most valuable assistance in the treatment of all severe injuries, and after large operations, for the last twenty years of my practice, and therefore confidently recommend it to all who have similar cases to treat. It consists of a frame three and a half feet wide and six feet long, made of $1\frac{1}{4}$ or $1\frac{1}{2}$ inch plank, 4 inches wide, joined by mortise flatwise. Over this, sacking or strong canvas is tightly drawn, and secured by tacks. A hole is made in the centre, of a convenient size for the passage of the alvine evacuations. A sheet is thrown over the bed, with an opening to correspond; pillows are placed upon its upper end, and the bed is fully furnished. This is preferable to any of the complicated and expensive beds in use, because it possesses all the properties required in a

fracture-bed, and yet is so cheap and simple as to place it within the reach of every one, in any locality. It imparts the evenness and firmness of a mattress to the softest bed of down or feathers; the patient can have his evacuations, without the least disturbance of the fracture, by raising the frame and resting it upon stools or chairs; during this time the bed upon which it was placed may be changed and made up, and, if it is desired, the patient may be carried safely from room to room, and, in pleasant weather, out into the open air of a piazza or back yard, upon this fracture-bed.

When the apparatus was applied, and the patient placed upon her bed, she declared herself to be much more comfortable than she had been since the occurrence of the fracture. The tension of the extending and counter-extending bands did not occasion any suffering at the seats of their application, whilst the irritated tissues at the points of fracture, though still painful, were relieved in consequence of the more favourable position of the fractured ends of the bone, as regarded the soft parts. Her constitutional symptoms were those of irritative fever, caused and kept up by local suffering. Her tongue being coated, and her bowels not having been moved for several days, a pill, composed of muriate of morphia gr. $\frac{1}{4}$, and calomel grs. v, was ordered to be given at bedtime, and to be followed in the morning by a tablespoonful of castor oil. To the knee, which was inflamed and greatly swollen, fifty leeches were ordered to be applied; after which warm fomentations, to encourage the bleeding, were to be used.

January 22. The patient passed a comfortable night. The knee is less swollen and painful, in consequence of the leeching and fomentations, and the calomel and oil had operated twice freely. She relished some gruel for breakfast. The extension and counter-extension were increased by means of the tourniquet, without pain at the seats of their application, and but slightly at the knee and seats of fracture. Fever having abated very considerably, ordered: R.—Quiniæ sulph. ℈j; tinct. ferri muriat. f℥ij; syrup, simpl., f℥ij. S.—A teaspoonful every two hours during the day, and tinct. opii acet. gtt. xxx at bedtime. Locally, flaxseed-meal poultice to the knee.

From this time forward the case progressed favourably. After a few days the fever subsided entirely, and, under the use of tonics and an improved diet thereafter, her strength gradually improved. Sleep was provided for during the night by the exhibition of the black drop, and oil was given occasionally to remove costiveness. The leeching was repeated once, in consequence of an aggravation of the swelling, from cold contracted one night, when a great and sudden change of the weather had occurred. After the poultices were discontinued, tincture of iodine was applied around the joint, to reduce the remaining tumefaction. At the end of seven weeks the anterior counter-extending strips became loose, and pain and slight abrasion resulted in one night from their pressure and friction, as if loose bandages had been used. These were removed and new ones applied, and all local irritation immediately subsided. When eleven weeks had elapsed, the splints

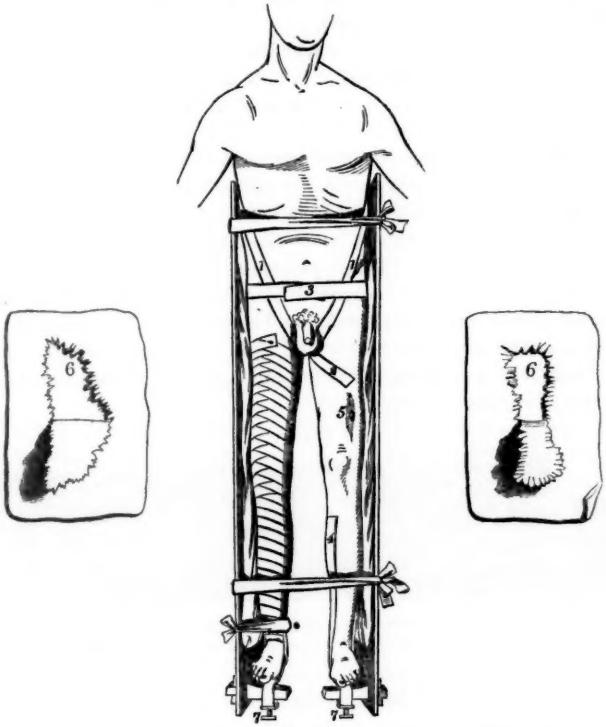
and bandages were all removed for the first time since their application, and the fractures seemed to be united. Enlargement of the knee, without pain, however, was still present. On the following day it was ascertained that the union, especially at the upper seat of fracture, was not sufficiently firm, there being outward deformity and shortening, produced by muscular contraction. The retentive apparatus was again applied, after bringing the femur as nearly as possible into its normal line, and allowed to remain four weeks longer. After this removal, being seventeen weeks from the application of this apparatus, and twenty-four weeks after the occurrence of the fracture, the union was considered sufficiently consolidated, and the apparatus was not again applied. By very careful measurement, at this time, the fractured limb was found to be scarcely one inch shorter than its fellow. In consequence of her protracted confinement, at such an advanced age, she was not able to leave her bed, however, until a week afterwards. Gradually she gained strength, and, by the aid of crutches, became able, at the end of the second week, to move about the room. The union, however, could not have been as perfectly consolidated as was supposed when the final removal of the apparatus took place, since, by a recent measurement, made January 14, the shortening has increased to $1\frac{1}{2}$ inch. She is, however, fully restored in every other respect, and is able to attend to her ordinary household duties. Notwithstanding the unusual amount of power which it became necessary to apply by the tourniquet, for so protracted a period, no complaint was made of pain at the seats of the application of this power, except when the anterior adhesive counter-extending bands became detached from the surface, and began to act as ordinary loose bands, this being promptly remedied by the application of new strips.

2. The next case is that of Thomas Stokely, aged $11\frac{1}{2}$ years, whom I attended, as consulting surgeon, at the request of Dr. Theophilus E. Beesley, the family physician. In this there was compound oblique fracture of both thighs, the bones piercing the pantaloons as well as the muscles and integument. Whilst I leave it to Dr. Beesley to present a full account of this case to the College, I furnish the accompanying drawing (Fig. 4, p. 421), which was very accurately taken from life by Kielman. The roller applied to the leg, and many-tailed bandages to the thigh, are shown as applied to the right limb only.

In the treatment of oblique fractures of the bones of the leg, requiring permanent extension and counter-extension, the adhesive plaster bands are quite as valuable as in fracture of the thigh. For simple oblique fracture, two splints, six inches wide, reaching from above the knee to about six inches below the foot, are sufficient (Hutchinson's modified). Each splint should have two holes at its upper and one mortise hole at its lower extremity. Those at the upper extremity are provided for the passage of the counter-extending adhesive bands, and the mortise below is for the reception of a cross-piece upon which the frame of the tourniquet rests. The tour-

niquet in this, as in fracture of the thigh, furnishes the most convenient and efficient extending and counter-extending power. Junk bags, or wadding, to fill up the inequalities of, and give support to, the leg, adhesive plaster

Fig. 4.



1, 1. Anterior adhesive counter-extending strips. 2. Distal extremity of posterior adhesive strip of left side. 3. Adhesive strip surrounding pelvis, binding the anterior and posterior strips to pelvis. 4. Inner extremity of the extending adhesive strip, forming stirrup under the foot to receive the strap of the tourniquet. 5. Cicatrix of left thigh. 6, 6. Holes made in the pantaloons by the protruding fragments of bone, full size. 7, 7. The common tourniquet, by which the power was applied.

bands, about two inches wide, and the roller, or the many-tailed bandage, complete the apparatus. For counter-extension four adhesive plaster bands are necessary, and for extension two are ordinarily sufficient. The former are applied spirally, so as to cross each other, the two anterior just below the tubercle of the tibia, and the two posterior at a point directly opposite. These, in their spiral course upwards, severally cross each other, externally and internally, opposite the joint; their proximate extremities are then passed through the holes in the splint, and securely tied outside. The

latter are applied to the foot and ankle so as to cross each other at the hollow of the foot, then over the tarsus anteriorly, and the upper part of the tendo-Achilles posteriorly. The strap of the tourniquet passes between the sole of the foot and the strips where they cross each other. After the extending and counter-extending adhesive bands are applied, they are bound to the surface by common bandages.

In cases of compound fracture a modification of the common fracture-box may be used very advantageously. In this the foot-board is omitted, and a cross-bar for the reception of the frame of the tourniquet is substituted. The sides of the box each consist of three separate segments. Of these the upper and lower are permanently screwed to the bottom-board, and the central one is attached by hinges. By this arrangement there is full access to the wound, which may be dressed from day to day without disturbing the extension and counter-extension maintained by the permanently attached upper and lower segments. This apparatus was used successfully in the case of Michael Gillis, who had compound comminuted fracture of both bones of the leg, in the winter of 1852–53, and is the sixth of the series of cases published in the *Amer. Journal of the Medical Sciences*, already alluded to. The following drawing represents this apparatus, omitting bandages and side-compresses.

Fig. 5.

1. The four counter-extending adhesive strips, as if encircling the knee and upper part of leg. 2. The two extending adhesive strips crossing at the bottom of the foot, ready to be applied to the foot. 3. Tourniquet.

Dr. BEESLEY then read the following note of the case of compound fracture of both thighs, referred to by Dr. Gilbert:—

In the afternoon of the 27th of 10th mo. (October), 1858, I was called, as the family physician, to Thomas, son of Wm. S. Stokely, No. 58 N. Eighth St., and met Dr. David Gilbert at the bedside of the sufferer. He was a lad of 11½ years of age, who had a compound fracture of both thighs, of the right a little below, and of the left a little above the middle of the femur, occasioned by his falling from a height of about 20 feet directly upon his feet. Subsequent examination of his dress showed that the upper fragment of one thigh, and the lower of the other, had protruded sufficiently to penetrate through his pantaloons in front. My friend Dr. Griscom had first seen the patient, and attended to the reduction of the bones. I assisted Dr. Gilbert in the application of such temporary splints as we had, and of the proper dressings. As a counter-extending band to each thigh,

two strips of adhesive plaster, each an inch and a half wide and two feet long, were so placed as to cross each other at the portion of the thigh where it joins the perineum, extending, the one in front and the other behind, to the upper part of the splint, and were there passed through two holes and were firmly fastened together, an outside splint only being applied to each limb. A broad adhesive strip was applied around the pelvis and over the counter-extending bands, so as to give them additional support. For the extending bands two broad strips of plaster were applied, from a little below the knees, along the legs, sufficiently long to leave a loop below the hollow of each foot for the strap of a tourniquet to pass through. Extension and counter-extension being then made, and the fractures properly adjusted, a common roller-bandage was bound on the adhesive strips from the ankles to the knees, and the many-tailed bandage was applied over the thighs. Between the splints and the thighs cotton wadding, folded in muslin, was used as padding. A compress and cold water dressing were kept to the wounds.

No complaint of pain at the seats of extension and counter-extension was made by our patient. The following day the temporary splints were laid aside, and a narrow board splint for each limb was substituted, extending along the outside from below the arm-pit opposite the nipple to about six inches below the foot. Extension was made and kept up by means of common tourniquets, the frames of which rested on blocks projecting inwardly from the lower extremities of the splints.

The wounds were inspected at the end of the third day, and were found sealed up by coagulated lymph, a slight oozing of bloody serum alone appearing. Dry compresses were now applied, and retained by the bandage of strips, and a flat bottle of ice-water was laid between the thighs, opposite the injured parts, and continued for a fortnight or more, to the apparent comfort of the patient.

After the first day there had been a considerable amount of swelling, which seemed more the result of effusion and congestion than inflammation. The general excitement was at no time great. It was highest about the fourth day, and subsided to a very moderate degree about the close of the first week. Anodynes were given from the commencement, about every four hours, to allay the spasms of pain which occasionally darted through the limbs, and to obtain sleep; they were found useful, in moderate doses, throughout the case. The neutral mixture, with a little tincture of rad. aconite, was administered, whilst there was febrile excitement; also occasionally, when needful, a cooling laxative or an enema. On the complete subsidence of the febrile symptoms, tonics were given, principally sulphate of quinia, with the tincture of the chloride of iron. The patient was placed from the commencement on a fracture-bed, consisting of a simple frame, about 4 inches deep, 5 feet long, and 2½ feet wide, with strong ticking stretched tightly over it and firmly nailed to it; the ticking was furnished with a hole in the centre for the evacuations, and under this hole was placed

a cushion or pillow. On this fracture-bed he could be lifted, without pain, to attend to his evacuations. The fracture-bed rested on a common mattress, and was supported, when desirable, by stools at the head and foot.

The first complaint he made of pain at the seat of the counter-extending bands was on the morning of the fourteenth day. On examination, it was found that, in order to relieve itching under the plaster, he had separated it for some distance from the skin on the previous evening, and that then this detached portion had acted as an ordinary loose counter-extending band in producing pressure and excoriation; to relieve this, his mother had stuffed cotton under the bands, but still the pain continued. We renewed the loosened portions of the bands, and little complaint was made during the remainder of the treatment until the fourth week, when it became necessary to apply fresh anterior and posterior counter-extending bands. The wound of the left thigh was fully cicatrized on the eighteenth day after the accident; that of the right not until the sixth week. After the first few days the discharge from each wound was very trifling in amount, proceeding only from the granulating surfaces.

We had reason to believe that firm union had taken place at the end of the fifth week; but, at the urgent request of the father of the patient, the splints were continued until the middle of the seventh week, or the forty-sixth day from the accident, when all retentive apparatus was removed. The thighs have their natural form and length. The patient was free, during the entire period of treatment, from the usual suffering experienced at the seats of extension and counter-extension; the only exception to this was the very slight uneasiness above mentioned, induced by the patient's interference with the bands at and near the perineum. The strips of adhesive plaster, by which extension was made, remained without removal from the day they were applied to the end of the treatment.

In writing an account of this interesting case, I have drawn freely from the notes of it kept by Dr. Gilbert, to whose skill, under Providence, I attribute its completely successful result, the more remarkable from the age, nervous constitution, and active character of the lad. Of all the cases of fracture of the thigh which have come under my notice in the course of a pretty extensive practice of more than forty years, there has been none where the apparatus made use of was so simple, so painless, and yet so thoroughly efficient in retaining the injured limbs in their natural position. The fracture-bed, by its cheapness, lightness, and convenience for moving the patient without pain and allowing the necessary evacuations of the bowels, seemed almost all that was to be desired in such a case. At first there was some difficulty in urinating, and the catheter was used a few times; after that, however, a large-mouthed flattish phial was placed so as to receive the urine, when the patient desired to void it. In conclusion I may add, that now, at the end of three months from the accident, the boy walks with facility and without limping, there only appearing some stiffness in his knees.

REVIEWS.

ART. XII.—*The Transactions of the American Medical Association.* Instituted 1847. Vol. XI. Philadelphia, 1858. 8vo., pp. 1027.

THE work before us belongs to that class of publications the contents of which demand most imperiously the exercise of a searching, discriminating, and fearless criticism. The very fact of the several papers embraced in these *Transactions* being published under the sanction of an institution which we have claimed as our National Medical Congress, representing, at once, the mind and will of the entire profession of these United States, gives to them an importance and influence far beyond what even the best of them would have commanded had they made their appearance under less lofty auspices.

It is in vain that the Association annually disclaims all responsibility for whatever may be contained in the reports and communications embraced in their printed *Transactions*. So far as relates to the accuracy of the facts, the correctness of the observations, and the legitimacy of the deductions set forth in such reports and communications, such disclaimer may with great propriety and truthfulness be made. Nevertheless, while the Association is unquestionably entitled to the credit that is due for whatever actual reforms it may have effected, and for whatever valuable contributions to the general fund of medical information it has been the means of eliciting and widely circulating, it is, also, in some degree at least, amenable to censure, when it gives currency to any report or essay which, in matter or manner, is calculated to bring into discredit the professional or literary character of the great body of American physicians. Do what we will, say what we will, the *Transactions of the American Medical Association* will not the less be viewed abroad as the exponent of the actual state of medical knowledge and education in the United States. It is fair to presume that, in the nomination of the committees charged to report on special subjects, the Association always makes choice of such of its members as are presumed to be best acquainted with the subjects referred to them, or to be possessed, at least, of the talents and skill requisite for their faithful and satisfactory investigation,—that its prizes are always bestowed upon such essays as are, in its estimation, worthy of them—and that, in accepting and referring for publication any voluntary communication, it believes it to contain either new facts and observations or original and valuable deductions from facts and observations already known. Among the professed objects of the Association a leading one is the elevation of the standard of medical education and the cultivation and diffusion of medical knowledge. Now, we apprehend that this object is not to be attained by allowing every paper which is read or offered to be read at its meetings, whether by a committee of its own appointment or presented by one of its members as a voluntary contribution to be inserted in its printed *Transactions* as a matter of course, without any regard to its matter or its manner.

We freely admit that, so far, the Association has kept prominently in

view the leading objects contemplated in its organization, and that it has already made some progress towards their achievement. We are fully aware that it has done much good, more, perhaps, than could have been expected from the lax character of its organization and the many difficulties which presented themselves as impediments to its successful working. Still, what it has done is but as nothing when compared with the important labour it has still to accomplish before its mission can be said to be fulfilled.

In the eleven volumes of *Transactions* published by the Association there is contained a large amount of valuable matter, comprising reports, essays, and communications of unquestionable merit and deep interest, which confer much credit upon their respective authors, as well as upon the Association, upon whose movement they have been elicited. There may, it is true, be pointed out, amid the many contributions of sterling worth which form the contents of these *Transactions*, a few which, in respect to matter, are of very doubtful character, or particularly exceptionable in respect to manner—papers which ought not to have received the *imprimatur* of the Association, and which would not have gained a place in its *Transactions* had they been submitted, before they were referred for publication, to a proper committee in order that their true value should be carefully tested. It was the earnest desire of the late Dr. Daniel Drake that this should be the course pursued in regard to every paper read or presented at the sessions of the Association, and he actually withheld an important communication of his own because the Association refused to allow it to take this course. We feel persuaded that, unless the plan suggested by Dr. Drake be speedily adopted, the volume of *Transactions* annually issued by the Association, while it continually and rapidly increases in bulk, will as certainly and rapidly deteriorate in the value of its contents.

We believe that the error of the Association is not that it has published too little, but rather that it has published too much. A volume one-half the size of that before us, containing only a few well-digested and carefully prepared original reports and essays, would do more for the promotion of medical knowledge, and for the establishment of a national medical literature, than can be accomplished by the ponderous tomes yearly issued by the Association, made up in their present very loose manner.

The address delivered by Dr. Paul F. Eve, the retiring president, at the formal opening of the session of 1858, is one of a very high order. Its theme is the objects of the Association, the extent to which these have been attained, and the probability of their final accomplishment through its agency. These subjects are rapidly, but very ably discussed. The address shows clearly that thus far the Association has been no failure, and that, provided the delegates who shall hereafter compose it, shall equal in ability and zeal those who have preceded them, little doubt need be entertained of the permanently beneficial influence it is destined to exercise over the best interests of the medical profession throughout the United States.

However far, it must, in truth, be admitted to have fallen short of the accomplishment of the great work for which it was brought into being, it is nevertheless very certain that, in the moral influence it has exercised, the emulation and concert of action it has encouraged, and the friendly intercourse it has fostered among physicians, and the amount of talent it has succeeded in enlisting for the examination of important questions in nearly every department of medical science, it has done a good work, for the achievement of which no other association that could be organized would perhaps have been equally competent.

In carrying out the important measures it was designed to effect, embracing as they do the promotion of medical science, the perfection of medical education, and the enforcement of a correct code of medical ethics, no one supposes that the Association could have accomplished everything demanded for the good of the profession, or that all the great designs of its founders were attainable in the brief space of eleven years.

The first of the reports in the present volume are those on Medical Topography and Epidemics. Of these reports, but three were received at the session of 1858, viz., from the States of Kentucky, New Jersey, and Ohio.

That from Kentucky is drawn up by Dr. W. L. Sutton. It is one of great interest, especially that part which treats of the early settlement of the State, and the perils and privations of the white men who first made choice of it for their abode; though all this has but little direct connection with any of the questions relating to the medical topography of the State and the hygienic condition of its population. The next portion of the report, which describes the character, occupations, habits, and diet of the people, the climate, with a short notice of the mineral springs, is more *germain* to the leading objects to be had in view in the preparation of a report such as that which was expected of Dr. Sutton.

Two diseases only are noticed in this report, namely, the jerks, or, as it has been denominated, epidemic epilepsy, and the so-called milk-sickness.

The "jerks," or "bodily exercises," as they were popularly termed, consisted in various spasmodic seizures and contortions of the muscles of the trunk and limbs observed in persons, who had been brought into a high state of excitement in the large assemblages that were drawn together during a period of religious enthusiasm, kept up by the exhortations and fearful appeals of popular preachers, more noted for zeal than wisdom. This religious excitement continued, with more or less intensity, from 1799 to 1805, and gave rise to convulsive affections which may be said to have constituted a true epidemic, "remarkable alike for the extent of country overrun, the number of persons affected, and the strangeness of the phenomena exhibited;" resembling in nearly all its features, making allowance for modifications necessarily produced by differences in the habits, opinions, position in society, and education of the patients, certain of the strange convulsive epidemics which prevailed in Europe during the middle ages. We fully concur with Dr. S. "that the history of these things is equally interesting," and we would say instructive, also, "to the physician and psychologist."

The account of "milk-sickness" was furnished by Dr. James H. Barbour, of Falmouth, Ky.; some additional remarks being added by Dr. Sutton, derived from reading and oral communications.

The disease known by the popular appellation of milk-sickness has prevailed, at different periods, as an epidemic, over a considerable portion of the Western States. It commences nearly in the same manner as an ordinary remittent. Its leading symptoms are muscular soreness, headache, with slight rigors or distinct chills, succeeded by reaction, loss of appetite, pasty tongue, oppression at the stomach, soon followed by burning, nausea, and vomiting, with intense thirst, the fluid vomited being large in quantity and of a green colour; constipated bowels; pulse small and generally diminished in frequency; hurried respiration, with frequent sighing; great restlessness, early drowsiness, merging into deep coma, with dilated pupils; face of a red and bloated or stupid, dusky appearance; nose and ears, as well as general surface, cool; extremities often cold, at the same time, the patient complaining of an acrid or burning sense of heat.

By many it is believed that this disease is produced in the human subject by partaking of the flesh and milk of cattle affected with the staggers or trembles; but Dr. S. believes that such is not the case, and that what has been denominated milk-sickness is one of a strictly malarial origin. His reasons for such belief are, 1st. In every location where the disease prevails, multitudes escape who partake of meat and of milk. 2d. It has occasionally attacked such as have been very careful to abstain from these articles. 3d. It is especially rare in young children, although, in Kentucky, milk forms a large portion of their diet. 4th. It prevails during the same season of the year as bilious fevers. 5th. It occurs in the same regions in which malarious fevers prevail, and contemporaneously with these in the same family; and, further, in the same individual an attack may commence as sick stomach and end as bilious fever. 6th. It occasionally happens that persistent vomiting and obstinate constipation, the prominent symptoms of the so-called milk-sickness, are the most constant and distressing symptoms of autumnal fevers. 7th. It has, in a few instances, like malarial fever, recurred for two or three years at the season in which it began without any known reapplication of the supposed remote cause. 8th. The most successful treatment is that which has been found best adapted to the cure of remittent fever.

To the report under consideration are appended a series of interesting tables showing, 1st. The population of each county in Kentucky; the number of acres it embraces; the proportion of its improved and unimproved territory; the amount of land to each inhabitant; the average number of deaths annually from cholera, dysentery, fevers, scarlatina, and zymotics, and the proportion of such deaths, in each disease, to the population of the respective counties in which they occur. 2d. The general average mortality annually of the limestone regions of the State, and that from each of the diseases above enumerated, and the proportion of such deaths to the entire mortality from known causes. 3d. The same series of facts in reference to the coal regions; and 4th. The colour, sex, and ages of those who died from cholera, croup, dysentery, continued fevers, fever generally, scarlatina, and hooping-cough, respectively.

The report on the Topography and Epidemic Diseases of New Jersey, is by Dr. Lyndon A. Smith. It presents a very general outline of the medical topography of the State, and of the most prevalent diseases within its limits from 1855 to 1857 inclusive. The most interesting portion of the report are the conclusions of its author in relation to the protective powers of vaccination, based on observations collected during an experience of thirty-seven years as a practitioner. With the first, second, and third, of Dr. Smith's conclusions, we entirely coincide. These aver the permanency throughout life, in every instance, of *perfect* vaccination—but that to effect this perfect vaccination in some subjects requires repeated insertions of matter in the arm, even though each may be attended with all the indications of a genuine vaccination—a resort, in short, to revaccination, again and again, until no longer any impression is made by the virus, and, finally, that even in those who have been exposed to the contagion of smallpox, a prompt resort to vaccination will often greatly mitigate the variolous attack and save the life of the patient. The correctness of the sixth and seventh of his conclusions is also borne out by our experience, they are—

"That the virus should never be taken from any but a healthy infant of healthy parents, and then there is little or no danger of propagating any other disease, as many think may be and often is done.

"That eruptions often occur after the most careful vaccination, and are owing to some peculiar idiosyncrasy, although the friends of the parents attribute it to the virus."

The fourth conclusion which Dr. S. has derived from his experience, that, namely, "a *very small* pustule, which goes through the regular stages and produces a constitutional effect about the ninth day, is more generally perfect than one that produces great inflammation, pain, and swelling, and affects the glands," conveys, certainly, an important truth, but it is expressed in language that will be apt to mislead the inexperienced practitioner. We cannot admit that the slighter the impression produced by the virus at the place of insertion after the proper period of incubation, and the less the impression it produces upon the system, the more genuine and perfect the vaccination. Experience has taught us that those of the European practitioners are perfectly right, who insist that in vaccination, the virus must affect the organism with a certain amount of intensity, or it will fail in affording to it a sufficient, much less permanent protection from variolous infection; and that when, in order to produce the necessary vaccine impression, they insert the virus at different parts of the same arm, or in both arms, they are justified in the propriety of the practice. The truth of the theory upon which that practice is based would seem to be established, by the fact that the subjects of their vaccinations have been shown to be much less liable to smallpox in its genuine or modified form, than those protected by a single insertion of matter.

The report on the Epidemics of Ohio, by Dr. George Mendenhall, is confined pretty much to the diseases prevalent during the year 1855. In reference to these it presents but a few general remarks. With the exception of a very general prevalence of intermittent fever, and diseases of a kindred character, during July, August, September, and October of that year, we are assured that the three years immediately preceding 1858, were unusually healthy. The epidemic choleraic disposition which showed itself in the latter part of the year 1848, and continued, with varying degrees of intensity until 1854, had completely subsided. The ordinary diseases incident to the country no longer exhibited this peculiar influence, and with the exception of the intermittent and remittent diseases of 1855, were diminished in degree.

As just remarked, during several months of the year just referred to, periodical fever prevailed to a very great extent, throughout nearly every portion of the State. Few localities were exempt—high and low grounds were alike visited by the disease. "In places where it had usually prevailed very few escaped; while in districts where it had been an entire stranger, numerous cases occurred. In short, the influences producing this class of affections seemed to be uniformly present in every locality." These influences Dr. M. considers to have been, "the character of the season in reference to moisture, warmth, and a profusion of immature vegetable growth." He is not aware that the periodical fevers of 1855, presented any unusual characteristics or complications—the tendency to diseases of an intermittent character undoubtedly predominated, the influence of which was sensibly felt in the modification of other diseases.

The next report is that of the Committee on Medical Literature, prepared by Dr. A. B. Palmer, of Chicago, Illinois. An annual report embracing a candid, unbiased, and, withal, critical examination of the actual condition of the Medical Literature of the United States; one that would exhibit a fair exposition of its leading faults and excellencies, the improvements it

has undergone, and a judicious exhibit of the amount of influence it has exerted in the advancement of medical knowledge in our midst, would no doubt be a valuable document, and if executed with ability, have no little tendency to elevate the character, improve the style, and increase the value and influence of the professional literature of our country. Let us not, year after year, content ourselves with drawing up disparaging pictures of the matter and manner of the contributions made by American physicians to the general fund of medical literature, and in uttering doleful complaints of the smallness of these contributions and their many imperfections. Let us rather examine what we have done, not by comparing this with the contributions, for which we are indebted to the labours of the learned and experienced professional writers of Europe, with ample opportunities at their command for making extended series of comparative observations in every department of medicine and its collateral sciences; but by comparing what American physicians have done in the department of medical literature with the peculiar circumstances in which they were placed, and the demands constantly made upon their time and energies in a practice, so far as relates to all of them located beyond our larger cities, amid a population sparsely distributed over a great extent of country, leaving little time, and less inclination, for that close application demanded for the careful collation of their observations, and the deduction from them of those general facts and principles adapted to the instruction of others. With such an examination, it will be found that the physicians of this country have, in times past, contributed as much, and that in as unexceptionable a form, as could reasonably have been expected of them, towards the literature of our profession, and that annually their contributions in this department, are becoming more copious and valuable. The pages of our medical periodicals bear ample testimony to this fact; nor are we deficient in independent works, systematic as well as monographic, to refer to in proof of the rapid progress and improvement medical literature is making in the United States.

Much has been said of the necessity of some measures being taken to promote in our midst, a national medical literature, though as to what those measures should be, there seems to be but little unanimity of opinion. All the schemes that have been formally suggested have appeared to be either merely temporary and doubtful expedients, or of a more or less impracticable character. We have no idea that an American medical literature is to be forced or coaxed into existence. With the improvement already commenced in medical education, throughout our country, and the certainty that this improvement will go on increasing from year to year, there will necessarily take place a corresponding increase of medical readers and medical authors, or at least of those competent to record and arrange their observations, and embody in correct language the principles they have evolved from the facts they have accurately studied and carefully compared.

Even now, no work in any of the branches of medicine, issued by an American writer, fails to receive an ample support from American physicians, provided it is one adapted to their wants. The great body of the profession with us, are still, in a great measure, mere "working physicians," —laborious practitioners, and such publications only will meet their wants as have a direct practical tendency. The mass of the profession is not yet prepared by education, or by habits of close, protracted, and laborious investigation to appreciate works appertaining to the higher branches of medical philosophy. It has not, as yet, been taught the applicability of purely philosophical deductions to the improvement of medical knowledge and skill.

It must be some time, therefore, before American medical literature will be able to boast of many meritorious works of this latter class.

The report of Dr. Palmer treats the subject of medical literature with a good degree of justness; his conclusions are, in general, correct, and his suggestions for the most part wise and practicable. In bringing his labours to a close, he presents the following as a very brief *résumé* of some of the leading positions assumed in the report.

"The periodical literature of the United States is regarded as possessing great abundance, variety, richness, and general excellence, and, though still possessing defects, is constantly improving. Many of the contributions are of great weight and value, indicating an enterprising and industrious profession. Serious defects are regarded as existing in the review department, arising mainly from the fact that the income of the journals will not justify pecuniary disbursements for literary labour; and editors necessarily engaged in other pursuits cannot command the time, if all possessed the ability to do the work thoroughly and well. A few well-supported journals in place of the many but illy sustained might tend to correct this evil; but the multiplicity of local journals is considered as peculiarly beneficial, by collecting from a greater variety of sources a larger number of facts and developing the powers of a larger number of writers. The interests of this part of our literature demand a more prompt and liberal pecuniary support.

"The number of original American medical works is increasing and their character is improving, and, in some respects, particularly in practical utility, they will not suffer in comparison with those of Europe; yet serious imperfections exist and decided improvements are demanded. Great and permanent improvements in medical, as in general literature, must be gradual, depending more upon the advancement of education, of taste, and intelligence, than upon any specific measures which may be adopted. Still, various particular measures, such as the frequent writing of medical theses during pupilage, and keeping systematic records of cases when in practice, would do very much in hastening on improvement. But, for the greatest perfection of our literature, we must wait the fuller development of our country, and for those changes of time and circumstances which shall produce a larger number of devoted savans and scholars, placing them in situations where a variety of absorbing pursuits shall not prevent the concentration of great talents upon a comparatively limited range of subjects.

"Respecting the reprint of foreign works, it is held that, while the free circulation of the best class of those works among us increases the knowledge and improves the taste of the masses of the profession, it does not interfere with the production of the higher order of original works, and that the moral obligation of our government to join with Great Britain in the enactment of an international copyright law, is by no means clearly established."

The report of the Committee on Medical Literature is followed by the report of a special committee, charged with the duty of devising a system of medical education for the consideration of the Association.

Among the prominent, and, certainly, most important objects of the American Medical Association, is to be ranked the elevation of the standard of medical education in this country, and the establishment of a proper and uniform criterion, by which to determine the qualifications of such as offer themselves for admission into the ranks of the profession. Unfortunately, however, in the attainment of these objects the Association has accomplished less than in respect to any of the others had in view in its organization. It may, perhaps, be affirmed, and certainly not without some foundation in truth, that the Association has not, however, failed altogether to exert an influence, even in respect to medical education, as is shown by the general evidence of a better preparation and higher attainments in those who now enter the profession, than was formerly the case; still it must be

admitted, that the Association has not succeeded in establishing, in any portion of the country, a course of medical instruction, which makes even an approach towards what it has itself set up as the correct standard. The subject is certainly one surrounded with many and serious difficulties, to overcome which, will demand much wisdom and patient waiting. A mistake, we think, has been made by the Association, in acknowledging, from the very outset, that a diploma conferred by any legally constituted medical college, no matter how deficient its curriculum of instruction, or loose its examination of candidates for the doctorate, is of itself a warrant for the admission of its holder into our ranks, and in applying, consequently, to the schools for that reform in the education of physicians which the Association, as the accredited representative of the entire profession, should have itself taken in hand. We agree with Dr. Eve, in the firm belief that the Association has reached a period in its history, when it is entirely qualified to determine what medical organizations, be they State, county, or city societies, hospitals, boards, or schools, are entitled to be represented in its sessions, and to prescribe the qualification of such as shall be received as delegates.

"If created to improve and advance medical education, and this is in accordance with its own expressed declarations, then it is quite certain the schools must be controlled. It has but to speak on this point and it will be obeyed; for it is now too late for any physician to oppose, or any medical college to set at defiance, the moral power of the Association."

Let it place at the proper height the qualifications demanded of its own delegates, and require the evidence necessary to prove the possession of these qualifications on the part of those who are admitted to participate in the business of its sessions, and it will soon render its diploma of membership so certain a criterion of medical character and proficiency, that there will be excited a generous emulation among physicians, in the effort to render themselves qualified for its attainment, and such a demand will be created for augmented facilities for medical instruction, as must necessarily force the schools to bring up their courses fully to the standard prescribed by the Association.

The special committee whose report is before us, after a brief review of the several propositions submitted to their consideration, arrive at the following conclusions:—

"*First.* Primary medical schools should be encouraged, but, as office instruction will continue to be sought by students, practitioners should either give them the necessary advantages of demonstrations, illustrations, and recitations, or, if not prepared to do so, they should refer them to such primary schools or medical men as will give them proper instruction.

"*Second.* The number of professorships should not be less than seven, viz., a professor of anatomy and microscopy, physiology and pathology, chemistry, surgery, practical medicine, obstetrics, and materia medica.

"*Third.* There should be but one term annually, which should commence about the first of October and close with the March following, thus lengthening the term to six months. The commencement of the term in October should be uniform in all the colleges throughout the country. During the session, there should never be more than four lectures given daily.

"*Fourth.* The qualifications for graduation, in addition to those now required by the schools, should be a liberal primary education and attendance upon a course of clinical instruction in a regularly organized hospital."

The committee recommend that, in order to give our medical colleges an opportunity to consider the above recommendations, and that the Asso-

ciation may have the advantage of their wisdom and their mature views, a convention of delegates from the several medical colleges be held previously to the next session of the Association, to devise a uniform system of medical education.

The report which follows is on Spontaneous Umbilical Hemorrhage of the New-born, by Dr. J. Foster Jenkins, of New York State.

The particular form of hemorrhage treated of in this report is, it is true, of comparatively unfrequent occurrence—it is, nevertheless, met with sufficiently often to demand the attention of every practitioner. When the true character of spontaneous umbilical hemorrhage is overlooked, and inefficient measures are relied on for the arrest of the bleeding, its termination is almost invariably fatal.

Dr. Jenkins has, with commendable industry, collected whatever facts were to be found upon record, and to these has added some additional ones, the result of his own immediate observation, or communicated to him by his medical friends. All of which he has carefully analyzed, and presented in a tabular form.

Dr. J. describes two leading forms or varieties of umbilical hemorrhage in the young infant, as follows:—

"*First*, and most common, that depending on a depraved condition of the blood; the spanæmia resulting sometimes from jaundice, through malformation or deranged function of the liver, sometimes from an inherited scrofulous or syphilitic taint, and probably not unfrequently from privation and despondency in the mother during gestation, or, during the same period, an excessive use of alkalies or diluent fluids.

"*Second*. Independently of any dyscrasia of the blood, umbilical hemorrhage seems to arise by reason of an unusual patency of the umbilical vessels in otherwise apparently healthy children."

This abnormal patency of vessels Dr. J. believes may exist in the first form of umbilical hemorrhage, as well as be itself the apparently exclusive cause of the bleeding.

In addition to the ordinary causes of umbilical hemorrhage enumerated above, Dr. J. refers also to a diseased condition of the umbilical vessels, the result of inflammation.

The facts embraced in the report in question are derived from one hundred and seventy-eight cases. In only *nine* of these could the hereditary transmission of the hemorrhagic tendency be inferred, but there is not a single instance on record of its occurrence in the offspring of families in the individuals of which there existed a liability to hemorrhage generally from the slightest injuries. In by far the larger number of the cases in which the sex of the patient is given, hemorrhage from the umbilicus occurred in males. Climate or race would appear to exert very little if any influence in the production of the hemorrhage. In the majority of cases it is impossible to trace it to parental disease, and there is no reason for supposing that a tedious or difficult labour has any agency in causing it. External violence may give rise to hemorrhage from the navel by displacing the provisional clot, before the occlusion of the umbilical arteries.

The hemorrhage may be preceded by the indications of a deranged condition of the liver, more especially by jaundice, less frequently by purpura. The bleeding may take place before or after the separation of the cord.

"The average duration of the disease, after the appearance of the hemorrhage, in eighty-two fatal cases, was three and a half days. Death has occurred as early as three hours from the beginning of the hemorrhage, while life has been pro-

longed thirty-eight days thereafter. When speedily fatal, death seems most often to result from exhaustion from loss of blood; or the fatal issue may be deferred, to be at a later period attended by purpura, œdema, diarrhœa, *muguet*, or other signs of exhaustion. It is not strange that coma or convulsion complicated six cases."

From a *resumé* given by Dr. J. of the pathological appearances in those fatal cases of umbilical hemorrhage which have come under notice, he infers, 1st, the great frequency of hepatic malformation or derangement connected with the disease; and 2dly, a similar frequency of perviousness in some of the umbilical vessels, or other fœtal openings. The relation to each other of these two conditions we have not a sufficient number of pathological facts to decide. In seven of the cases in which there was absence or obstruction of the ducts, all the umbilical vessels were open in three, the vein only in one, in three the condition of the vessels is not noticed. In one case the biliary ducts were free, with patency of the fœtal openings. How far a deficient secretion of bile may be a cause has not been determined. No microscopic examination of the liver as to the extent of diminution of its secreting cells is known to have been made.

In the treatment of umbilical hemorrhage Dr. J. prefers the application of "the ligature *en masse*" as recommended by Paul Dubois. It is applied by transfixing the integuments at the base of the umbilicus, with two large hair-lip needles; the one being passed horizontally, and the second perpendicularly to and beneath this; waxed thread being then passed several times around each of the needles, in the figure of 8. The needles may be removed at the end of the fourth or fifth day, but the eschar produced by the ligature should be allowed to separate spontaneously, no attempt being made to hasten its removal.

In cases unattended by any evident malformation of liver, an attempt should be made to promote its functions. In cases where there had been *any* secretion of bile since birth, Dr. J. would not hesitate to employ mercurials despite their antiplastic influence on the blood. The mineral acids, the *tr. ferri chloridi* and the sulphate of quinine, anodynes to allay muscular spasm, and a nourishing diet, with stimulants to sustain the strength, would seem in many cases to be also indicated.

In regard to prophylaxis, a prohibition of alkalies and the use of the mineral acids during pregnancy is suggested.

We come next to a report on the Influence of Marriages of Consanguinity upon Offspring, by Dr. S. M. Bemiss, of Louisville, Ky.

It had long been asserted that the offspring of parents closely connected by consanguinity were far more liable to present physical and mental imperfections—various congenital abnormities—a strong proclivity to scrofulous and tubercular diseases, to idiocy and insanity, and to various affections eventuating in a deprivation of the sense of sight and hearing, and of speech, than the offspring of parents not connected by ties of blood—both classes being supposed to be similarly circumstanced in respect to all other causes affecting the integrity of their issue. In support of the position here assumed, many facts have been adduced of a very striking character; it is but recently, however, that the question has been made one of special inquiry, with the view to its solution by well authenticated and properly arranged statistics.

In whatever point of view the subject may be examined, whether in its bearings upon certain points in physiology, etiology, or pathology generally, or in reference to the regulation of marriage through an enlighten-

ment of public opinion or by legislative enactments, it is one of deep interest and importance. We feel grateful to Dr. Bemiss for the zeal and industry he has exhibited in the collection and arrangement of so large a body of facts, in illustration of the influence of the marriage of relations by blood upon offspring, as those he has embodied in the report now under consideration. The tables given by him exhibit the results of near nine hundred such marriages; a sufficient number, he believes, to warrant the belief that any additions thereto, if procured in the same manner, would not materially affect the ultimate result.

In the attempt of Dr. B. to collect a sufficient series of observations in respect to the physical and mental condition of the offspring of marriages between parties neither themselves related, nor the descendants of blood relations, as a standard by which to compare and determine the proper value of the results furnished by the first table, he has not been so successful as could be desired—and he has been unable to learn the existence of any researches, which establish the average fecundity and vital statistics of marriage in the United States.

Of the 833 marriages of consanguinity tabulated by Dr. B., there were born 3942 children—1509 males and 144 females. Of the 3942 children, 1134 were defective, 145 deaf and dumb, 85 blind, 308 idiotic, 38 insane, 60 epileptic, 300 scrofulous, 98 deformed, 883 of them died young, and 53 were sterile. Thus showing only 838 or 21 per cent. who were without defect or disease.

One hundred and twenty-five marriages among those not related or known to be the immediate descendants of relations, gave 837 children—444 males and 380 females. Of the 837 children, 18 were defective, 3 deaf and dumb, 1 blind, 6 idiotic, 1 insane, 3 epileptic, 1 scrofulous; 134 died young; leaving 58, or 46.4 per cent. without defect or disease.

The report next in order is on the Function of the Cerebellum, by Dr. E. Andrews, of Chicago, Ill. The view advocated by the reporter is that the lateral, which are strictly speaking the posterior, lobes of the cerebellum exert their influence over the posterior group of muscles, while the median lobe presides over the anterior group. This view, which at best must be considered as rather inferred than proved, is based upon the following two propositions, the truth of which Dr. A. endeavours to establish by an anatomical examination of the brain in different warm-blooded animals.

"1. In the warm-blooded animals, the median lobe, or vermiform process of the cerebellum, varies in size directly as the bulk and power of the anterior group of muscles.

"2. The lateral lobes vary in like manner as the power of the posterior group of muscles, subject, however, to certain variations, hereafter to be mentioned."

In reference to these exceptions, Dr. A. remarks that, upon comparison it will be found that the lateral lobes, while they have a certain correspondence with the posterior group of muscles, have one equally striking with the size of the cerebral hemispheres, and the rank of the animal in the scale of intelligence.

"There are, therefore, two conditions governing the lateral lobes as to size, which may be illustrated by three propositions:—

"1. If the animal have large complex hemispheres of the brain, and, at the same time, very powerful posterior muscles, then both these conditions unite in demanding large lateral lobes of the cerebellum, and these organs, in fact, attain, under such circumstances, their maximum development.

"2. If the hemispheres of the brain be of a low grade, but the posterior

extremities still powerful, then the deficiency in one condition is balanced by the excess in the other, and the animal will have lateral lobes bearing a moderate ratio of size with the median.

"If the animal have cerebral hemispheres of decidedly inferior development, and, at the same time, posterior limbs which are feebler than the anterior, then both conditions will coincide to reduce the lateral lobes to a bulk less than the median."

The tendency of all the facts adduced by Dr. A. leads, he believes, to the conclusion that the three lobes of the cerebellum have some function connected with voluntary motion; the influence of the median lobe being expended on the muscles of the anterior, and that of the lateral lobes on those of the posterior half of the body—the latter being likewise in some way connected with the mental functions, their development bearing, in some measure, a direct ratio with the intelligence of the animal.

"The *nature* of the influence exerted by the cerebellum upon the muscles is not," Dr. A. remarks, "very clear. Although it may be true that, through it, the mind co-ordinates the muscular action, yet *that* is not true which is stated by Carpenter and others upon the subject, viz., that the size of the cerebellum is in a direct ratio with the number and variety of co-ordinated movements which the animal is capable of exercising.

"Within the limits already explained the size of the cerebellum is *directly as the quantity and power of muscular fibre to be moved*, with no regard whatever to the simplicity or complexity of their combinations. Thus, the co-ordinated actions of a squirrel are far more numerous and varied than those of a dolphin. A mouse co-ordinates more than a bat; a rat more than a bird; a cat more than a seal; a sloth more than a sheep; yet in these and in a hundred other instances the animal which co-ordinates least has the largest and most complex cerebellum, the ratio being as the bulk of muscle to be used, and in the case of the lateral lobes, partly as the grade of the intelligence of the creature. It seems to me, therefore, that, while it may be true that the mind, through the cerebellum, co-ordinates motions, it does not do so because it possesses a specific function of co-ordination, but simply because its action is directly excito-motor, and the mind through it can select any muscle or set of muscles it may choose for action."

Dr. A. does not present his conclusions as absolute truths—they require, he admits, confirmation by a new and fuller examination of the facts derivable from experiment and from pathology—they at present merely show the *direction* in which the facts of comparative anatomy point.

The very interesting report by Dr. C. B. Coventry, of Utica, N. Y., on the Medical Jurisprudence of Insanity, embraces a general sketch of the pathology, the classification and the tests of insanity—the plea of insanity in criminal cases—the kind and degree of insanity that should deprive an individual of his liberty, or of the control of his property—invalidate a contract or a will, or avoid responsibility for crime—feigned insanity and the testimony of skilled witnesses in courts of justice.

Each of these questions are every day acquiring increased importance in reference to the faithful administration of justice and the protection of persons and property with a due regard to the safety and humane treatment of such individuals as are unquestionably irresponsible agents by reason of their mental alienation. These several questions, though treated in a concise manner, the remarks of the reporter in regard to them are replete with instruction.

Dr. C. lays down the following propositions as established in this country, by various judicial decisions, in respect to the plea of insanity as a defence in criminal prosecutions:—

"1. Was the prisoner, at the time of committing the act, capable of distin-

guishing between right and wrong, in regard to the particular act?—*i. e.*, was he capable of appreciating the criminality of the act, and the consequences which would result, and the penalty for its commission? If so, he is considered responsible. Or,

"2. Was the prisoner, at the time of committing the act, labouring under an insane delusion? The mere fact that the prisoner was labouring under a delusion is not considered a justification, unless there is a direct connection between the delusion and the criminal act. Or,

"3. Was the prisoner impelled to the commission of the act by an insane impulse which he could not control? By an insane impulse is not meant a mere burst of rage, or passion, or excitement, which he may not control, but an impulse resulting from cerebro-mental disease; consequently it is necessary to show some other evidence of disease than the act itself—as a change in his character; its incompatibility with his former character and conduct; the absence of all motive, or of motives, which could influence a sane man; the existence of insanity in his family, or a hereditary predisposition; a previous injury, or ill health, showing evidence of disease. In the absence of such collateral evidence, the prisoner would usually be held responsible.

"The question to the jury should be simply, Is he proved to be insane? not whether he can distinguish between right and wrong, or any other particular test. The divisions into intellectual and moral insanity, into general and partial, though appropriate in a scientific work on insanity, are not recognized by the courts of justice."

The rules and regulations which Dr. C. has laid down for the conduct of a professional witness, in cases in which the plea of insanity is raised, are well worth the consideration of every physician.

The volume contains another able report, closely connected with the foregoing; we allude to that on Moral Insanity, in its Relations to Medical Jurisprudence, by Dr. D. Meredith Reese, of New York.

That the moral feelings, the affections, and the sentiments, "the love of family and friends, the love of justice, and the feelings of veneration and of conscientiousness," may become deranged, perverted, or destroyed, there can be no doubt. But with this admission the all-important question arises, is this derangement the result of causes different from those which give rise to intellectual insanity? Can moral insanity exist independently of the latter? or is it not rather one of the indications—often the first—of the presence of that disease of the brain productive of general mania—that is, of perversion or disturbance of all the mental functions, in reference alike to the moral feelings, the affections and sentiments, and to the purely intellectual powers? Can the mere fact of an asserted perversion of the feelings, inclinations, and propensities—of the existence of simply moral insanity—while the individual possesses sufficient intelligence to judge of the character and consequences of his actions, is labouring under no delusion, and is, consequently possessed of the ability to control his acts, be a sufficient cause for declaring him irresponsible for his deeds? Would the ends of justice be likely to be satisfied, and a proper protection thrown around the life and property of the citizen, were such a foundation for irresponsibility in those accused of crime to be entertained by our courts?

Dr. Reese very clearly shows that simple moral insanity has no existence. We commend the conclusions of the author to attention.

Turning back, we find a report by Dr. Edward Jarvis, of Massachsetts, on the Law of Registration of Births, Marriages, and Deaths, which is replete with judicious and instructive remarks on the subject of registration. To render this measure productive of all the advantages it is calculated to yield, it must be evident that some degree of uniformity is demanded in the manner

of registration everywhere pursued; that the same facts, similarly authenticated, and arranged in the same manner, the same nomenclature of diseases, and the same systematic indication of the actual cause of death in the mortuary department of the registration, should be presented, to enable us to compare the value of life in different localities, and to determine, as far as possible, the causes which lower or increase its value, as the case may be, in each. Let the great events of life, with their attendant circumstances, be fully and accurately recorded and reported, so that their lessons may be correctly taught to the world, and we agree with Dr. Jarvis that "it matters not by what means they are ascertained."

The next report is on the Nervous System in Febrile Diseases, and the Classification of Fevers by the Nervous System, by Dr. Henry F. Campbell, of Georgia.

The author of this report has shown himself to be an industrious, able, and successful investigator of the nervous system in certain of its physiological and pathological relations. He is already well known to our readers by his publications in respect to the secretory and excito-secretory system of nerves, and by his suggestions, in a former volume of the *Transactions of the American Medical Association* (vol. x.), presented in the form of general propositions, in regard to the agency of the nervous system in the production of febrile diseases.

Fully admitting the fact that in the production of disease there are certain morbific influences which affect the solid tissues through the medium of the blood, producing in the latter some primary modification either in its constitution or elements, Dr. C. nevertheless insists upon the positive agency of the nervous system in the production of diseased action, in causing the presence or absence of certain phenomena, and in impressing their peculiar characteristics upon the different forms of febrile maladies; thus combining in one system "the inevitable truths of humouralism with the equally inevitable and undeniable truths of neuropathism."

Assuming, then, that all morbid actions are more or less influenced in their manifestations by aberrated nervous action, he insists that as the normal actions of the *cerebro-spinal system of nerves* are subject to cessation and interruption, so those fevers, in the production of which this system is chiefly concerned, are necessarily of a *paroxysmal* character; while inasmuch as the normal actions of the *ganglionic system of nerves* are of a continued or uninterrupted character, so diseases, the morbid phenomena of which are chiefly caused by abnormal action of these nerves, have a character of *continuousness*. The *paroxysmal fevers* appertain, therefore, to *lesions of the cerebro-spinal system of nerves*, and the *continued fevers* to the *ganglionic*. Again, Dr. C. teaches that as the normal action of the *cerebro-spinal* nerves pertains almost exclusively to sensation and motion, with only a secondary and comparatively remote influence—the excito-secretory—upon nutrition and secretion, while the entire office of the *ganglionic* system, in health, is to preside over these functions, therefore in *paroxysmal* fevers we have intense pain, modified sensation, and symptoms allying them to neuralgic and convulsive diseases, but in *continued fevers* the most prominent characteristics are modified nutrition and altered secretions.

In the report before us these several propositions are separately examined, and the process by which they have been arrived at concisely developed. In his exposition of the leading data upon which he has attempted to base a true neuropathic system of pathology, and by which he has constructed a rational physiological classification of febrile diseases, Dr. C. has certainly

exhibited no little ingenuity, and has succeeded admirably in giving to both an air, at least, of truthfulness. To say the least of them, his labours are well timed, and are invested with an additional importance from the fact that in our modern doctrines explanatory of diseased action and morbid phenomena, and in all our nosological systems, there has been evidently a constantly increasing tendency to the adoption of views borrowed almost exclusively from the teachings of the physiological and pathological chemists, ignoring in a great measure the agency of nerve-action as a pathological agent, debasing the living organism, with all its vital endowments, to a mere machine, of which all the phenomena, normal and abnormal, if not solely, are at least mainly, due to a simple action and reaction between the constituent elements of the blood, to unhealthy secretions, and to a consequent defect in the construction and condition of the solid tissues.

Whether or not the views of Dr. C. shall stand the test of a more close investigation; whether or not they shall be sustained by the facts hereafter to be developed and by the results of more extended clinical observations or direct experiments, they will have, at least, the effect of directing renewed attention to a subject the investigation of which cannot fail to be productive of profitable results.

We have next a report on Stomatitis Materna, by Dr. D. L. McGugin, of Keokuk, Iowa. The disease thus named has of late years prevailed, in certain portions of the United States, to a considerable extent. By many writers it is considered to be a disease of modern origin and of a specific character, occurring only in females during the period of pregnancy or lactation, especially the latter, being restricted to particular localities, and described solely by medical writers of a recent date.

Dr. McGugin has, however, shown that in medical writings dating as far back as the times of Hippocrates, a notice, and even accurate description, of an affection similar in all respects to stomatitis materna, as it now prevails, is to be met with. He insists, however, that the disease is one *sui generis*, peculiar to females during gestation and lactation, and occurring more frequently in some localities than in others, while in a few it has not as yet been observed; that its production cannot be ascribed to any peculiarity of climate, locality, season, meteorological conditions, or geological formations. He most positively denies its identity, in either its etiology or pathology, with ordinary chronic stomatitis, with which it has been classed by some writers, or with land scurvy, of which it has been supposed to be a form by others.

The only constant predisposing cause observed by Dr. McG. was a strumous, tubercular, or scrofulous diathesis. He, at the same time, however, would seem to admit that intense cold, excessive atmospheric moisture, insufficient or innutritive diet, want of due exercise, and malarious influences may, possibly, act also as predisposing causes, by contributing to a diminution of the vital forces, by rendering digestion imperfect, nutrition defective, and the blood deficient in its proper constituents.

With Dr. McG. stomatitis materna consists essentially in a perversion of digestion and assimilation. Gestation and lactation produce it by their interference with the regular and complete performance of those functions.

We cannot say that, after a careful perusal of the report before us, we have become converts to the views set forth by Dr. McG., in regard either to the specific character, properly speaking, of the disease of which he treats, or to its being one that is met with only in the pregnant and suckling female. We cannot perceive that he has adduced a particle of evidence in proof of

either position. That the disease is one having its origin in a defect of constitutional vigour and an impoverished state of the blood, caused by depressing meteorological causes, bad or insufficient food, want of exercise, grief, anxiety, despondency, &c., combined, in the majority of cases, with the new demands upon the weak, delicate, and chlorotic female, during the process of gestation or of lactation, we think there can be little doubt; but we do not believe it to be confined to the female; the whole history of the disease, its causes, phenomena, course, and terminations, would seem to point strongly to the fact of its identity with ordinary *follicular stomatitis*, which we know to be a common consequence of deficient hæmatosis and depraved nutrition in both sexes.

The treatment which Dr. McG. has found most successful in cases of stomatitis materna is by tonics, especially such of the metallic tonics which possess alterative properties. Nitrate of silver and iodide of iron he recommends, if they are tolerated by the stomach. The "hydriodate and chlorate of potassa," either alone or combined with vegetable tonic extracts or infusions, will also, he informs us, be found highly beneficial. What he most relies upon is the chlorate of potassa, internally, in the form of a solution, one drachm to a pint of distilled water, in the dose of a tablespoonful three times a day. Pastes, saturated with the solution he directs, to be allowed to soften in the mouth and mingle with the saliva. He recommends, also, the subnitrate of bismuth, made into pills with the extract of hop. Malt liquors with a large amount of malt, and given in an active state of effervescence, he has found particularly beneficial. To insure the cure of the disease, regular exercise in the open air, with tepid bathing, are essential.

"If, however, all measures fail to bring relief, and the patient is, day after day, wasting away under the exhausting influence of the disease, then, in order to save the life of the mother, the dernier alternative of weaning the child must be determined upon and fulfilled. This, however, will not always arrest the progress of the disease, when it has become chronic in its character, and has continued through several pregnancies."

Dr. J. B. Flint, of Louisville, Ky., furnishes an interesting and most truthful report on the True Position and Value of Operative Surgery as a Therapeutic Agent.

Surgery, even in the limited sphere to which it must be restricted, if we insist upon a close adherence to the true etymological meaning of the term, as simply the art of employing manual or mechanical appliances for the prevention or relief of deformity, the excision of diseased structures, and the removal of morbid accumulations or foreign bodies, accidentally introduced, from one or other of the cavities, passages, organs, or tissues of the body, the presence of which either interferes with the healthful performance of the functions of the organ, or threatens the extinction of life, is certainly an art from which the human race has derived a large amount of positive good; and though it can scarcely be denominated, with strict propriety, a therapeutic agent, it is nevertheless one that is capable of the most important preventive and remedial application.

Mere operative surgery, however, the certain result of which is, in the majority of cases, more or less of deformity or decrepitude, must be regarded as among "the last resorts" of practice; as a means to be brought into service only after all other available means of saving limb or life have been exhausted. To conservative surgery is to be assigned, most certainly, a far higher rank than to mere operative surgery. It is unquestionable that the acknowledged masters of the art have become so, and secured their im-

perishable renown, not by their daring and successful use of the knife, but by their careful observation and study of the nature and phenomena of disease, and of the tolerating and recuperative powers of the living organism, and by their discriminating and cautious rather than heroic methods of treatment.

In the report before us, after a most scathing exposure of the rank charlatanism to which a love for operative surgery so commonly leads—of the unworthy and even dishonest tricks that are too often practised in order to attain that *éclat* which is almost always attendant upon him who prefers "the shedding of blood" to the nobler and more scientific plan of saving life and limb without a resort to the knife, and to secure that higher estimate which the public voice awards to the surgeon who is noted for the frequency and boldness of his operations, without much regard to their necessity on the one hand, or their successful termination on the other, than to him who, without parade, prefers to cure his patients by therapeutical means of which the knife forms no part—Dr. Flint examines, with great calmness and sound sense, the true value of operative surgery as a curative measure. In deprecating a frequent resort, or in any instance, without the most urgent and evident necessity, to any of what are termed the "major operations," Dr. Flint would not be thought to entertain any disposition to undervalue operative surgery, either as to the frequency or importance of its interpositions in the treatment of disease. While he would include very few of the so-called major operations among "the legitimate resources of the healing art," he would have us bear in mind "that no such doubt or reservation applies to that great class of professional services unfortunately denominated '*minor surgery.*'"

The more prominent points in the report before us are thus recapitulated in the form of concise propositions, all of which are deserving of a serious consideration on the part of every member of the medical profession, but more especially of those who have but recently entered upon the practice of the healing art, and who are among those most liable to be misled by what Dr. F. denominates "dramatic surgery:"—

"1. The true position and real dignity of all therapeutic agencies is the same, determined by intrinsic and not accidental considerations; and operative surgery has no rightful pre-eminence, in this respect, over other sections of practical medicine.

"2. There are *pseudo-surgical* as well as *vero-surgical* operations, the latter being such only as are undertaken with a therapeutic purpose and *probability;* and if any of these confer more distinction upon him who performs them than others, they are such as are most eminently beneficial to the subject of them.

"3. Of this character are not, in general, those which constitute the staple of what we have termed 'dramatic surgery,' denominated also 'heroic' or 'exploitive' surgery, and these performances, therefore, should be scrutinized very carefully before they are reckoned among the legitimate agencies of our art, or allowed to become the criteria of professional ability or merit.

"4. The fascinations of 'dramatic surgery' are dangerous to professional morality and mischievous to society, and we should endeavour to replace them, in ourselves and the public, by just and rational views of the operative proceedings of our art.

"5. Under the designation of 'conservative surgery,' there is at present an endeavour at reforms in operative surgery, which recommends itself most urgently to the co-operation of all wise and conscientious practitioners."

Passing by a short letter addressed by Dr. E. D. Fenner, of New Orleans, to the President of the Association, and which we do not think was intended for publication as a part of the transactions of the session, we come to the

prize essay on the Clinical Study of the Heart-Sounds in Health and Disease, by Dr. Austin Flint, of Buffalo, N. Y. Like every other production of its talented author, it bears throughout testimony to his habits of close observation and cautious induction. It constitutes a valuable contribution towards increasing our acquaintance with the character of the cardiac sounds in health, and the lesions by which a deviation from these sounds is caused. We regret that a due regard to that economy of space which it is necessary for us to observe, in view of the many works which crowd our table, waiting to be noticed, prevents us from giving even the interesting summary of conclusions, but we hope to lay them before our readers. D. F. C.

Two papers in this volume, both on the same speciality, remain to be noticed. The first of these is a

"Report on the Treatment best adapted to each Variety of Cataract. With drawings illustrating a case. By Mark Stephenson, M. D., Surgeon to the New York Ophthalmic Hospital."

The second is the "Prize Essay," entitled "Vision, and some of its Anomalies, as revealed by the Ophthalmoscope. By Montrose A. Pallen, M. D., of St. Louis, Missouri."

Questions in ophthalmology are so rare among the various inquiries which have hitherto claimed the consideration of the American Medical Association, that the appearance of the two papers above presented will invest the new volume with unusual attractions, for a very respectable number of its readers. The interest, moreover, which belongs to the nature of their topics is necessarily increased by the influence, inseparably connected with the official positions of these papers, one being a special report and the other a prize essay. The topics themselves are certainly not inferior in importance to very many of those which are allowed to swell the too often overgrown dimensions of the annual offspring of the labours of the Association. It is strange, indeed, that what has occupied the elaborate attention of an European Congress, recently assembled for the sole purpose of discussing questions in ophthalmology, and composed of the ablest professional experts in the world, has so long escaped the attention of the great representative body of the profession in this country.

This oversight cannot have resulted from want either of materials or of workmen, or of general interest among actual practitioners.

Under these circumstances we are disposed to hold the Association to a double responsibility on this occasion; and we purpose, briefly, to inquire whether, after neglecting for ten years to call forth anything of moment on diseases of the eye, the Association has succeeded in presenting, in the first place, a report on cataract and its treatment worthy of the standing which, in spite of its "conspicuous" disclaimer, it has conferred upon that report by its acceptance and publication; and whether, in the second place, its protracted silence on such topics has been adequately broken in the originality, novelty, and superior practical value of the essay on vision and its anomalies, as revealed by the ophthalmoscope, upon which it has set the seal of its highest approbation in the award of an annual prize.

We fear that the expectations naturally aroused in both cases, are destined to a general disappointment.

The author of the report on the Treatment best adapted to each Variety of Cataract, was authorized to prepare his "Essay on the Subject of Cataract," as he terms it, in May, 1856. He appears to have entered upon his task under a due impression of its "interesting and momentous" character,

and to have been duly surprised that it had not already been accomplished. Notwithstanding the two years allowed him, and his full appreciation of the importance and difficulty of his undertaking, we regret to find that, while he has not methodically treated the points which were specially allotted to him, he has succeeded no better in producing anything which deserves to be regarded as an original or practical report. He tells us nothing which is not presented with equal, if not greater clearness, force, and fulness in the standard text-books on surgery, and which is not decidedly meagre and common-place in comparison with the contents of the chapters on the same subject in each of the standard works upon diseases of the eye. In short, we have looked in vain throughout the report for something in the shape of cases, statistics, observations, or suggestions, derived from research or clinical investigation, that is sufficiently novel, or interesting in any respect, to justify the space occupied in the volume, or the prominence conferred by the impress of the Association.

The only two clinical cases referred to in illustration, are inconclusive and unsatisfactory to a remarkable degree. The first of these was that of a "child between three and four years of age," upon whom he divided the lens with a curved needle by the "anterior operation" for *traumatic* cataract. "There being no haste in this case, *one eye being good*, I determined to test what the efforts of nature with time would accomplish, without a repetition of the operation." At the expiration of one year, some little absorption had actually taken place! A drawing "of the lens, as it then appeared," was taken at this time, and a second drawing was made "at the expiration of six months more," showing that the "work of diminution was steadily yet slowly progressing"! In order to illustrate this precious instance of the result of a single operation for the absorption of a cataractous lens, the paper has been illuminated with five coloured figures, which serve only to show the *failure* of the operation in the small amount of the absorption depicted, and to suggest a doubt, even as to this amount, from the want of correspondence between the form of the unremoved cataract, in the two representations of the same eye, one of the natural size and the other a magnified view of the same eye. Compare Figs. 4 and 5, and it will be observed that the shape of the unabsorbed cataract is entirely different in the two, though the latter purports to be a magnified view of the former; this is also the case, though less conspicuously, in Figs. 2 and 3.

The termination of the history is equally characteristic and instructive.

"Soon after the second drawing was taken," says he, "to my great regret, the parents of the child removed to California, and (although they promised to write to me) *I have never heard from them since*, but I have no doubt as to the final result." "This case," he continues, "is interesting, and proves to my mind a practical fact which I have long entertained, that the frequent repetition of the operation is unjustifiable."

The second case is related as one in which he had an opportunity, a few years since, of testing the question of double vision, as a consequence of the removal of one lens only in case of single cataract. The subject of this case, a "beautiful young woman, was brought to the institution by the matron of the Magdalene Asylum, who had a cataract in one eye, while the other was perfect. She could not endure the thought of having such a blemish in one eye," and therefore "she wished the cataract removed." Here, again, he performed the anterior operation for solution; but, naturally enough, with much more gratifying success.

"In eight weeks the cataract was entirely removed; and, what was still more pleasing, she could see with that eye as perfectly as the other, there being no confusion of vision whatever. The matron of the institution—a Christian lady in the fullest sense of that term, and in whose veracity I have the strongest confidence—informed me that this young woman could, without the aid of glasses, sew the finest linen cambric muslin with that eye. From what I saw of her, when she returned to the hospital the last time, I am satisfied the statements of the matron were, in every particular, strictly correct."

His readers will, doubtless, readily believe in the escape from double vision; but it will require more than the veracity of the exemplary matron to convince them that the patient could sew so wonderfully "with that eye"! The author hints that he can only account for this "strange" result of eight weeks' work, by the supposition "that a new lens, or something of the same consistency or translucency, is reproduced or secreted, which answers the purpose of the original one"!

The only other remark we have to notice is one in reference to displacement, in which he says, after stating in detail the injurious effects of the operation, and the consequent objection to it: "Notwithstanding these detracting evidences, *displacement* is the operation generally preferred by American surgeons, while in England and Germany it is in disrepute." We must take the liberty of expressing our doubts in regard to the accuracy of this opinion as to the general preference of American surgeons. We know of no evidence to support it, and we have too much faith in the knowledge and judgment of the ophthalmic surgeons of our country to believe anything so discreditable to either. Whatever may be the practice of some few surgeons of standing, who still resort to a procedure which, on the reporter's own showing, is a bad one as it is usually performed, and in spite of the same assumption on the part of a recent writer in a distant State, we cannot believe that it is ever willingly performed by experienced operators in this country. It certainly is not, to any extent, in Philadelphia; where, unless Prof. Pancoast's operation, which is not the ordinary method of displacement as he describes it, be included, the couching and depressing methods are condemned, and that of lateral displacement is not generally adopted. We have no hesitation in expressing the opinion that the "Report," as it is called, "on the Treatment best adapted to each Variety of Cataract," is a misnomer, and the attempt thus to determine very important questions, a miscarriage.

Whatever doubt there may be, however, in regard to the liability of the Association for the character of ordinary papers and reports, is, of course, removed so far as prize essays are concerned. Here, at all events, there can be no mistake as to the position of the ruling power. It has intrusted its reputation, not to the authors of the essays, but to the Standing Committee on Prize Essays, and must hold the latter, not the former, to accountability. Whatever may be overlooked in an ordinary report, for which the Association refuses to become responsible although the publication occurs under its own authority, we have a right to expect in an essay, crowned with the title of pre-eminent merit by the assembled medical wisdom and learning of the country, something more than a useful compilation, however well arranged, well expressed, and accurate and comprehensive it may be. Now, this is what we do not find in the otherwise very creditable thesis of Dr. Pallen. As a report on the ophthalmoscope, and its use in the exploration of the eye, and divested of its preliminary matter, it might be regarded as a desirable contribution to the *Transactions* of the Association, and, as such,

might be entitled to a respectable position in the volume; but as a prize essay on vision, &c. &c., it is surely out of place, and neither receives justice itself as a volunteer communication, nor does justice to the Association as a professional and scientific body. There is nothing in the rudimentary account of the anatomy and physiology of the eye, with its diagrams and zoological introduction, which prefaces the somewhat more elaborate sketch of what is known of colour-blindness and some other anomalies of vision, or even in all of this together, that need have led the prize committee to mistake a praiseworthy exposition for an original production, or even a professor's *thèse de concours*. The interesting account of the ophthalmoscope, its employment, and the pathological changes of the internal eye which may be observed by it, as derived especially from French and German teaching, was cleverly drawn up, and justly elicited the approbation of the committee; still, they could hardly have accepted it as new, or as the result, beyond the mere act of arrangement at second hand, of *native* investigation; nor could they have considered the intelligent rehearsal of European experience, as such, entitled to the doubtful advantage of *national* supremacy in a professedly American work. We are at a loss, therefore, to comprehend the *rationale* of the process by which they reached a conclusion which must compromise the Association with all readers, at home and abroad, who know anything of the progress of the science of ophthalmology in the last five years. Happily the number of those who are thus informed in this country is by no means small; and enough has been done by American writers on the ophthalmoscope to redeem the profession of the country from the mortifying imputation to which the hasty action of the prize committee has subjected our national congress.

Perhaps, since there are no marks of original investigation, no statistics, no records of observation or experiment, nothing, in short, but the literary and critical, if not practical, merit which should characterize every paper admitted into the published *Transactions*, the hearts of our respected umpires were won, or their own visions confused, by the imposing array of illustrations which are appended to the essay. Here, however, the committee is again unfortunate, inasmuch as the pictures, although excellent in themselves, are nearly all "verified and coloured" copies from Jaeger, and present faces which had already become familiar to the student as well as the practitioner in many parts of the United States, to say nothing of British and continental readers. Before closing our remarks, we desire distinctly to say that it is the prize committee, and not the essayist upon whom the responsibility in this case rests. We would under no other circumstances be willing to notice this essay except in terms of commendation, as creditable to its youthful author. Although in some respects it is not the kind of dissertation on such a subject which additional experience would most probably induce him to prepare, it yet affords abundant evidence of well-trained industry, talent, and ability, which cannot fail to reap more substantial and permanent rewards than the too often equivocal, and in this instance doubtless unexpected, distinction of a prize. E. H.

ART. XIII.—*A Treatise on Human Physiology, designed for the use of Students and Practitioners of Medicine.* By JOHN C. DALTON, Jr., M. D., Professor of Physiology and Microscopic Anatomy in the College of Physicians and Surgeons, New York, &c. &c. Blanchard & Lea: Philadelphia, 1859. 8vo., pp. 608.

A NEW TEXT-BOOK on physiology every two or three years has become a necessity. The numerous contributions constantly being made to that science require frequently to pass under the eyes of able and experienced men in order that they may be accepted, modified, or rejected, and, if found worthy of being incorporated into the mass of facts we possess, placed before the profession in a form accessible to all, and adapted to the comprehension and wants of the student.

It requires no ordinary mind to do this well. We know it is the generally expressed opinion that any one can write a text-book; this may be true, but few, notwithstanding, can write a *good* text-book—one which, while concise, is not meagre; full, but not diffuse; exact, yet not tediously minute; systematically arranged, but not fettered to classification—such a book requires something more in its author than a mere acquaintance with the science he teaches; it necessitates a logical and well-balanced mind, not, perhaps, genius, or even the highest order of intellect, but, nevertheless, those best of all substitutes, good common sense and a well regulated understanding.

Of all sciences, none have probably made more progress within the last few years than physiology. Hundreds of facts have been added, old theories have been disproved, and new ones have taken their place, until hardly a vestige remains of physiology as it was twenty years since. The sciences of physics and chemistry have, to a certain extent, become tributary to physiology, and to physicists and chemists we owe a large number of those valuable contributions which have almost rendered it a positive science.

So long as physiologists were content to explain all functional phenomena by designating them as manifestations of vital force, but little real advancement was to be expected. Investigation was crushed by an abstract idea which signified nothing, and the application of the laws which govern the natural phenomena of the universe to the human body when hinted at, was smothered in the torrent of denunciation which followed.

Gradually, however, things changed as one function after another was ascertained to be due to simple and known causes, until now, when, though we must all recognize the modifying influence of vitality over every function, we can explain none by it alone. Heat is produced by the combination of carbon and oxygen, and follows the union as surely out of the body as in it; food is acted upon by saliva and the gastric, intestinal, and pancreatic juices, as effectually in a porcelain capsule at 100° Fahrenheit as within the alimentary canal, and absorption takes place through living and dead animal membranes equally well. Within the body, however, there are so many disturbing causes resulting from vitality, or, as Beclard designates it, "organization in action," that all these processes, together with others we have not mentioned, are so palpably modified that we cannot, in wisdom, deny its influence. Thus far we may safely go; but those who would degrade the human soul to the position of a vital principle, as they understand it, have neither religion nor science to sustain them, and they who

reject the influence of vitality over the functions of the body have no just appreciation of the delicacy, the beauty, and the completeness of the great organic kingdom established by nature's Architect.

From the known character of Dr. Dalton as an original observer, we had every reason to expect that a treatise on physiology from his pen would not only exhibit a satisfactory view of the actual condition of the science, but would, at the same time, be marked by that independence of thought and confidence of expression which are not to be obtained by merely reviewing the labours of others. These expectations have, in a great measure, been realized in the volume before us, but, at the same time, we are compelled to confess having experienced a feeling of disappointment that Dr. Dalton should have omitted some important subjects, the want of reference to which impairs its completeness as a text-book for students. Nevertheless, there is so much original matter, so much that is doubly valuable because confirmed by observation and experiment, and so true an idea of the manner in which physiology should be studied expressed upon almost every page, that we cannot but admire it, and console ourselves with the hope that the omissions will be supplied in a future edition, which we feel sure will be demanded. If, therefore, in the course of our remarks, we should have occasion to differ with the author, and to state what we consider to be the deficiencies of the volume, we shall not be chargeable with a desire to detract from its real value, a value which, founded as it is upon beauty and fulness of illustration, elegance of diction, and originality of thought, will long cause it to retain an elevated position in the ranks of physiological literature.

In the review of a volume of the character of that under consideration, it would be inexpedient to notice in detail all the subjects treated by the author, for, being a text-book, it must of course contain a large amount of matter found in every other treatise of the kind, and therefore perfectly familiar to most of our readers. We shall, accordingly, state briefly the general plan and arrangement of the work, and then remark upon such points as, in our survey, we may deem of most importance either from their value, their novelty, or from the general interest which attaches to them.

In the introduction physiology is defined, and divided and subdivided, according as it relates to vegetable or animal structures, till human physiology, to which the attention is mainly to be directed, is reached. In the opinion of the author, that this latter division cannot be properly studied or comprehended, without an acquaintance with the vital phenomena occurring in vegetables and animals, generally, we heartily agree. It is too true that at the present day many calling themselves physiologists are disposed not only to overlook, but even to decry, the advantages to be derived from experiments instituted upon the lower forms of organic beings, forgetting, apparently, that to investigations of this character, we owe the greater portion of our present physiological knowledge, and that from them we have every hope of future progress.

Vital phenomena are referred to under the following heads: 1st. Those of a physical character, such as the formation of the voice, the motions of the heart, &c. 2d. Those of a chemical character, embracing the transformation of food, &c. 3d. Those connected with reproduction and development; and, 4th, those which belong to the nervous system. The views advanced by Dr. Dalton, in connection with these points, show that he fully recognizes the influence of vitality, without ascribing more power to it than it really possesses.

In relation to the manner in which it is proposed to study physiology, we cannot do better than quote the author's own words.

"The study of physiology is naturally divided into three distinct sections:—

"The first of these includes everything which relates to the nutrition of the body, in its widest sense. It comprises the history of the proximate principles, their source, the manner of their production, the proportions in which they exist in different kinds of food and drink, the processes of digestion and absorption, and the constitution of the circulating fluids; then the physical phenomena of the circulation, and the forces by which it is accomplished; the changes which the blood undergoes in different parts of the body; all the phenomena, both physical and chemical, of respiration; those of secretion and excretion, and the character and destination of the secreted and excreted fluids. All these processes have reference to a common object, viz., the preservation of the internal structure and organization of the individual. With certain modifications, they take place in vegetables as well as in animals, and are consequently known by the name of the *vegetative formations*.

"The second section, in the natural order of study, is devoted to the phenomena of the NERVOUS SYSTEM. These phenomena are not exhibited by vegetables, but belong exclusively to animal organizations. They bring the animal body into relation with the external world, and preserve it from external dangers, through the means of sensation, movement, consciousness, and volition. They are more particularly distinguished by the name of the *animal functions*.

"Lastly, comes the study of the entire process of REPRODUCTION. Its phenomena, again, with certain modifications, are met with in both animals and vegetables, and might, therefore, with some propriety, be included under the head of vegetative functions. But their distinguishing peculiarity is, that they have for their object the production of new organisms, which take the place of the old, and remain after they have disappeared. These phenomena do not, therefore, relate to the preservation of the individual, but to that of the species; and any study which concerns the species, comes properly after we have finished everything relating to the individual."

In the first chapter of the section devoted to nutrition, the proximate principles are treated of in a general manner, and after Robin and Verdeil, they are defined to be those substances which, simple or compound, chemically speaking, exist under their own forms in the animal tissues or fluids. Under this head, we meet with various substances, which, adopting Robin and Verdeil's classification, are arranged as follows, into three divisions:—

1st. The INORGANIC, as water, chloride of sodium and potassium, carbonate and phosphate of lime, &c.

2d. The CRYSTALLIZABLE SUBSTANCES OF ORGANIC ORIGIN, as the different kinds of sugar, fat, and starch.

3d. ORGANIC SUBSTANCES proper, as albumen, fibrin, casein, globulin, &c.*

In the three following chapters, these principles are considered in detail, concisely, clearly, and, in general, fully and correctly; we say in general, because we think that in one or two instances the descriptions have not been so exact as they might have been, and occasionally an important substance has been altogether overlooked. Thus no reference is made to the property which globulin possesses of being transformed, under certain circumstances, into hæmato-crystallin—the crystallizable albuminoid body of the blood. We are aware that Robin and Verdeil deny the existence of any proximate crystallizable organic principle existing in the blood, regarding the crystals met with in this fluid, as consisting of phosphate of soda, which, in crystallizing, abstract a little albumen and coloring matter from the blood in which they are formed; but such an opinion is not tenable for

a moment, and has been completely disproved by the analyses of Lehmann and others.

A few other organic principles which might very properly have been enumerated here, are described in detail in other parts of the work, under their appropriate heads.

The fifth chapter treats of *food*. Dr. Dalton very properly discards Liebig's division of aliments into combustible and histogenetic—a division which cannot be sustained either by argument or experiment, and which only retains a place in physiological literature, from an overweening respect for the eminent ability and high scientific character of its proposer. No one elementary article of food can be regarded as exclusively serving for the maintenance of heat, or as contributing entirely to the nutrition of the tissues. Without fat, there is every reason to believe a single organic cell could not be formed, and under a regimen of pure albumen alone, it has been shown that the animal heat can be sustained. The composition of several of the more important articles of food is given, and it is shown that the nutritive value of any one of these does not depend upon its containing a large amount of any individual alimentary principle, but upon the presence of all these principles in such proportions as the system requires.

From original observations, Prof. Dalton found that an adult man, in full health, and taking free exercise in the open air, required about two and a half pounds of solid food, and three pints of liquid food, divided as follows:—

Meat	16 ounces.
Bread	19 "
Butter	3½ "
Fluids (coffee and water)	52 "

The nutritive value of any article of food cannot be positively inferred from its chemical constitution, but must be determined from actual experiment. If all substances were equally digestible, we should be able at once to state their value in the economy—but this is not so; bone and cartilage, though capable of being digested to a certain extent, by carnivorous animals, are not sensibly acted upon by the human gastric juice, and therefore, though possessing all the elementary principles required by the organism, they cannot contribute to its nutrition. The same may be said of gum, which differs but slightly in composition from starch, but which is not so acted upon by the digestive fluids as to fit it for absorption.

With regard to the action of the *saliva*, Prof. Dalton adopts the view that, although this secretion possesses the power of changing amylaceous substances into sugar, this faculty is not practically exercised, inasmuch as the gastric juice entirely prevents the metamorphosis. There is no doubt, we think, that the gastric juice very materially retards the conversion, but that it entirely prevents it is not so certain. Prof. F. G. Smith, of this city, from his experiments upon Alexis St. Martin, was led to the conclusion that the change is not arrested in the stomach, but that glucose can readily be detected in the contents of this viscus after the ingestion of amylaceous food. Whatever objections may be urged against these experiments cannot apply to a second series instituted by the same observer upon M. Brown-Séquard (who possesses the faculty of emptying the stomach at will), from which it was clearly shown that sugar was present in the contents of the stomach after amylaceous food had been taken which certainly did not contain it. The point is one, however, upon which physiologists will continue to differ till it is more satisfactorily determined.

The *composition, action, &c., of the gastric juice* are next reviewed. In stating the numerous experiments instituted with reference to the nature of the free acid existing in this secretion, no mention is made of Prof. F. G. Smith's observations, which seem to show the presence of lactic acid in this secretion.

The remarks upon the action of the gastric juice are full and judicious, and the whole subject is presented to the reader in the clearest possible manner.

The *intestinal* and *pancreatic juices* are then considered, and their special properties in reference to the digestion of sugar, starch, and fat, amply pointed out. Dr. Dalton shows very clearly that no secretion found in the intestinal canal possesses the property of emulsifying fat in so eminent a degree as the pancreatic juice. But, after Colin's experiments, in which the pancreas was extirpated from the horse and the fat still absorbed, we will have to give up the theory which ascribes the agency to this gland alone, and admit that the intestinal juice and the bile are also capable of effecting that minute division of oily matter necessary to its absorption.

Passing over the seventh chapter, which relates to absorption, and which is written in the usual clear and concise manner of the author, we come next to the eighth chapter, which treats of the *bile*. Here we have a number of original observations which are highly important, but which have already been laid before our readers in Dr. Dalton's paper published in a former number of this journal. The various tests for bile are mentioned, and the fallacies of those which depend upon oxidation of the colouring matter and consequent change of hue are indicated. Pettenkofer's test, the only reliable one we at present possess, is described in detail.

The variations in quantity and functions of the bile are next considered. From original experiments, Dr. Dalton makes it appear that the discharge of bile into the intestine is greatest immediately after eating and within the first hour. He also determined that bile, or, at least, a substance answering to its reactions, was constantly present in the small intestine, but could not be detected in the large intestine. These results agree perfectly with those we have obtained from similar experiments.

In common with most physiologists of the present day, Dr. Dalton does not ascribe a high digestive power to the bile, neither does he regard it as excrementitious. In fact, there is but little doubt that the bile has not completed its function when it is discharged into the intestine, for if, as determined by Bidder and Schmidt, it be diverted from the intestine by the creation of a biliary fistula, the animal perishes in a short time with all the symptoms of inanition. It cannot, therefore, be considered an excrement, and, though Dr. Dalton and others have failed to detect it in the blood, we agree with him and with Bidder and Schmidt in regarding its passage into this fluid in a decomposed state as certain.

The researches of Marcet,[1] published since Dr. Dalton's volume was given to the press, go far to show that the fat taken as food into the stomach is transformed into fat acids, and, but for the action of the bile, would be excreted as such with the feces. He invariably found that, after the ingestion of fat, the oleic and margaric acids were found in the stomach, and that, if the bile was prevented passing into the intestine, these acids were constantly found in a free state in the alvine dejection. As if, how-

[1] Medical Times and Gazette, August 28, 1858. Also Brown-Séquard's Journal de la Physiologie, October, 1858, p. 806.

ever to add to the confusion already existing, M. Brown-Séquard[1] publishes the result of an experiment performed by him several years since, from which it appears that fat was absorbed from the large intestines without having been acted upon either by the bile, pancreatic juice, or juice secreted by the glands of the small intestine.

In the ninth chapter, the *formation of sugar in the liver* is considered. Nothing is said of Sanson's experiments, which demonstrate the presence of glycogenic matter in the blood of the portal vein, in both herbivorous and carnivorous animals, and, in fact, such presence, so far, at least, as the latter are concerned, is denied by Dr. Dalton. A commission of the French Academy of Medicine, appointed to report upon Sanson's *Memoirs*, confirmed his results, so far as they related to the presence of glycogenic matter in the portal vein of the herbivora, but contradicted them as regarded the carnivora. In his investigations, Sanson made use of Bernard's method for the separation of the glycogenic matter by caustic potash, and also employed a method of his own, free from the objections urged against the use of the potash solution. By both methods, he demonstrated the existence of glycogenic matter in the portal vein of a dog, fed for several days on flesh alone. The experiments were frequently repeated, and with uniform results. In the report to which we have referred, the commission objects to the use of potash, on the ground that by its action on albuminoid bodies, a small quantity of a substance is sometimes produced, capable of being converted into sugar, in presence of sulphuric acid, and therefore the results of Sanson's experiments on dogs are set aside. However correct the commission may be as regards the action of the potash, nothing is adduced against the other process employed by Sanson, and we cannot, therefore, at present, invalidate his conclusion. Colin's experiments, which show that sugar is found in the chyle of both herbivorous and carnivorous animals, also go far in support of Sanson's views of the external origin of this substance. The views of Bernard in relation to the sugar-forming function of the liver are however adopted without reserve, although other experiments to which we might refer, instituted long before the publication of Dr. Dalton's volume, have shown indubitably that sugar clearly derived from the food will enter the blood, and even be excreted as a component constituent of the urine. Pavy's experiments[2] also demonstrate conclusively, in opposition to Bernard's theory, that sugar does not exist during life as a constituent of the liver, but is generated by fermentation after death, or removal of this viscus, from the glycogenic matter or hepatine existing in it. He has also shown that the quantity of hepatine varies according to the nature of the food. These researches had not, however, been published when Dr. Dalton's volume issued from the press.

Chapter tenth treats of the *spleen*. Nothing in addition to our present knowledge is stated relative to the functions of this organ. Dr. Dalton regards it as constituting, with the mesenteric and lymphatic glands, a system having a common function, connected with certain changes going on in the blood. We may add that, in all probability, the thyroid body and supra-renal capsules have also an identity of function with the spleen, as well as with those organs mentioned by Dr. Dalton.

The four following chapters relate to the blood, respiration, animal heat, and the circulation.

In the chapter relating to the *blood*, the crystallizable substance of this

[1] Op. cit., p. 808 (note).

[2] Guy's Hospital Reports, Oct., 1858.

fluid is again entirely overlooked. We do not find the slightest reference to it, which is certainly surprising in view of the great attention physiologists have recently given to the matter, and the importance which attaches to it on account of its medico-legal relations. There are several points in this chapter wherein we are constrained to differ with Dr. Dalton. Were we alone in this respect, we should feel a hesitancy in putting our opinion in opposition to that of so generally correct an observer as the author, but in the matters to which we refer we think we are sustained by the great majority of physiologists.

In speaking of the red blood-corpuscles, Dr. Dalton says:—

"In structure, the blood-globules are homogeneous. They have been sometimes erroneously described as consisting of a closed vesicle, or cell-wall, containing in its cavity some fluid or semi-fluid substance, of a different character from that composing the wall of the vesicle itself. No such structure, however, is really to be seen in them. Each blood-globule consists of a mass of organized animal substance, perfectly or nearly homogeneous in appearance, and of the same colour, consistency, and composition throughout. In some of the lower animals (birds, reptiles, fish) it contains also a granular nucleus imbedded in the substance of the globule; but in no instance is there any distinction to be made out between an external cell-wall and an internal cavity."

We might quote from Todd and Bowman, Carpenter, Bennett, Milne-Edwards, Lehmann, Müller, Draper, and many other high authorities, against Dr. Dalton in the view which he takes of the histology of the red corpuscle, whilst, with the exception of Valentin, Donné, and Robin, we know of no recent observers holding the theory which he advocates. The existence of a cell-wall is not only logically inferred from the action of liquids upon the corpuscle through endosmosis, but may frequently actually be demonstrated. For instance, if water be added to the blood of certain fish, as the gold-fish (*Cyprinus auratus*), the red corpuscle will be seen to become spherical, swell up, and finally to burst, giving exit to the nucleus, and leaving nothing else visible under the microscope but a broken and shrivelled membrane. The same liberation of the nucleus follows the addition of urea and ether, but in these cases the membrane is dissolved. In frogs and birds, it is almost impossible, owing to its great density, to cause the rupture of the cell-wall of the red corpuscle, and consequently we find it exceedingly difficult to obtain blood-crystals (which are formed from the contents of the corpuscles) from the blood of these animals.

In relation to the white corpuscle, we are again forced to disagree with Dr. Dalton. He entirely denies the existence of a nucleus in this body, and regards the appearance of such after the addition of acetic acid as being due to the coagulating and disintegrating action of the acid upon the substance of the white corpuscle. Now, by carefully focussing the object-glass of a microscope, and by the aid of oblique light, the presence of a nucleus in the white corpuscle can be clearly established without the addition of acetic acid. Frequently, also, by the action of reagents, the white corpuscle can be made to burst and allow the nucleus to escape. The action of acetic acid is not altogether that of coagulation and disintegration. It is mainly by its dissolving effect upon the free granular matter of the corpuscle that we are enabled to distinguish the nucleus so readily after its addition to the blood.

In relation to the destruction of the red corpuscle, Dr. Dalton expresses the opinion that no such action takes place within the organism, but that, being once formed, the red corpuscle continues to exist whilst life remains in the individual. He says:—

* * * * "But there is no reason for believing that the red globules of the blood are any less permanent, as anatomical forms, than the muscular fibres or nervous filaments. They undergo, it is true, like all the constituent parts of the body, a constant interstitial metamorphosis. They absorb incessantly nutritious materials from the blood, and give up to the circulating fluid, at the same time, other substances, which result from their internal waste and disintegration. But they do not, so far as we know, perish bodily in any part of the circulation. It is not the *anatomical forms* anywhere which undergo destruction and renovation in the nutritive process; but only the *proximate principles of which they are composed*. The effect of this interstitial nutrition, therefore, in the blood-globules, as in the various solid tissues, is merely to maintain them in a natural and healthy condition of integrity."

When we call to mind that, in certain anemic conditions of the system, as chlorosis, scorbutus, &c., we not only obtain a less number of red corpuscles by chemical analysis, but can actually count them under the microscope, and, therefore, positively demonstrate their paucity, we are at a loss to conceive why Dr. Dalton should entertain the opinion that they are never destroyed. Every pathologist is aware of their deficiency in the diseases we have mentioned, as well by external indications as by chemical and microscopical examination. But aside from the evidence afforded by pathology, there are many strong reasons for believing that the red corpuscles undergo disintegration as a natural and healthy process.

From what we have said it will be perceived that we do not regard the chapter on the blood as fully representing the present state of our knowledge on the subject.

In the chapter on *respiration* this function is treated of in a systematic and perspicuous manner, and the views expressed are such as may be considered well established. The process is considered in the inferior orders of animals, and then detailed descriptions of the respiratory movements of the chest and glottis, and of the changes in the air and blood, are given.

In relation to *animal heat*, Dr. Dalton's opinions are those which are beginning to be held by all physiologists who are not adherents of a particular school. We quote the following passages as containing the conclusions arrived at in relation to this subject—conclusions in which we must express our entire concurrence.

"Animal heat, then, is a phenomenon which results from the simultaneous activity of many different processes, taking place in many different organs, and dependent, undoubtedly, on different chemical changes in each one. The introduction of oxygen and the exhalation of carbonic acid have no direct connection with each other, but are only the beginning and the end of a long series of continuous changes, in which all the tissues of the body successively take a part. Their relation is precisely that which exists between the food introduced through the stomach and the urinary ingredients eliminated by the kidneys. The tissues require for their nutrition a constant supply of solid and liquid food, which is introduced through the stomach, and of oxygen, which is introduced through the lungs. The disintegration and decomposition give rise, on the one hand, to urea, uric acid, &c., which are discharged with the urine, and, on the other hand, to carbonic acid, which is exhaled from the lungs. But the oxygen is not directly converted into carbonic acid, any more than the food is directly converted into urea and urates.

"Animal heat is not to be regarded, therefore, as the result of a combustive process. There is no reason for believing that the greater part of the food is 'burned' in the circulation. It is, on the contrary, assimilated by the substance of the tissues; and these, in their subsequent disintegration, give rise to several excretory products, one of which is carbonic acid.

"The numerous combinations and decompositions which follow each other

incessantly during the nutritive process, result in the production of an internal or vital heat, which is present in both animals and vegetables, and which varies in amount in different species, in the same individual at different times, and even in different parts and organs of the same body."

Nothing could be more lucid, concise, and at the same time more comprehensive than Dr. Dalton's description of the heart and circulation of the blood. The arterial, venous, and capillary circulations are considered under separate heads, and the general view presented is such as will convey to the student an adequate idea of the subject.

The fifteenth and sixteenth chapters treat of *secretion* and *excretion*. Every point of importance connected with these processes is touched upon, and the various products of secretion and excretion well described, with the very notable exception that no mention is made of the character, constituents, &c., of the feces, except incidentally when treating of the bile. Nor would we otherwise know from a perusal of the volume that any such thing as intestinal excrement was to be met with, as a consequence of the ingestion of food and deposit in the intestines of certain effete matters of the organism. Aside from the fact that some reference should have been made to this excretion, we think the results of the researches of Marcet, Wehsarg, Ihring, and others, sufficiently important to require that they should be brought within the immediate reach of the student of physiology. The subject to which we refer would, perhaps, have been more appropriately considered in an extension of the sixth chapter, which relates to the function of digestion. But having brought the food to the termination of the small intestine, it is left. Under no other head could the matter have been properly brought than the one we are now considering—excretion; but as we have seen, the author is here also silent upon the point, and we are forced to infer that the large intestine, and the very important part which it performs in the economy, have inadvertently escaped his notice.

These chapters finish the first section, and bring us to the middle of the book. With the exceptions to which we have referred, we think it well adapted, by its terseness, perspicuity, and general accuracy, to convey correct ideas of the great subject of nutrition. We should, perhaps, have preferred that some points considered should have been more fully dwelt upon; but we are aware that fulness of detail is in many cases properly sacrificed to conciseness and clearness.

The *nervous system* forms the subject considered in the second section. The first chapter of this section relates to the general structure and functions of the nervous system. The histology of the nerves first engages our attention. Then, in illustration of the progressive development of the nervous system, we have numerous examples from the lower animals, commencing with the radiata, through the mollusca and articulata, till the vertebrata, at the head of which stands man, are reached.

The second chapter relates to *nervous irritability* and its mode of action. All the principles enunciated in this chapter are carefully and accurately stated, with all the elaborateness necessary in a work constructed on the plan of that under our notice. The peculiarities of nervous action are clearly stated; and we presume the following remarks, which conclude this portion of the subject, will meet with the unqualified approval of a majority of the physiologists of the present day:—

"The nervous force, therefore, while it has some points of resemblance with electricity, presents also certain features of dissimilarity which are equally im-

portant. It must be regarded accordingly as distinct in its nature from other known physical forces, and as altogether peculiar to the nervous tissue in which it originates."

In chapter third the *spinal cord* is considered. The various important functions exercised by this organ are detailed with Dr. Dalton's accustomed perspicuity, and several experiments illustrative of these functions are given in detail. The ensuing paragraph, ending the chapter, expresses in a few words the varied character of the influence exercised by the spinal cord:—

"We find, therefore, that the spinal cord, in its character of a nervous centre, exerts a general protective action over the whole body. It presides over the involuntary movements of the limbs and trunk; it regulates the action of the sphincters, the rectum, and the bladder; while, at the same time, it exerts an indirect influence on the nutritive changes in those parts which it supplies with nerves."

In chapter fourth the various parts composing the *encephalon* are considered, and the peculiar office of each pointed out. In treating of the hemispheres, Dr. Dalton shows the direct relation existing between the size of the cerebrum and the degree of intellectual capacity. Nevertheless, there is, as he thinks, little doubt that other circumstances, in addition to size, may modify its functional activity. We quote the following passage in illustration of his views:—

* * * "The functional activity of the brain is modified, no doubt, by its texture as well as by its size; and an increased excitability may compensate partially or wholly for a deficiency in bulk. This fact is sometimes illustrated in the case of idiots. There are instances where idiotic children with small brains are less imbecile and helpless than others with a larger development, owing to a certain vivacity and impressibility of organization which take the place, to a certain extent, of the purely intellectual faculties."

The cases of the two dwarfed and idiotic Central American children, exhibited a few years since under the name of the Aztec children, are adduced in support of this view. These children, as many of our readers will doubtless recollect, were possessed of exceedingly small heads, and yet were extremely excitable and vivacious; and though incapable of continuous articulation, readily understood gestures, and knew the meaning of the different tones of the voice.

Chapter fifth relates to the *cranial nerves*. Here, although we have descriptions of the nerves, their origins, courses, &c., Dr. Dalton has entirely omitted to describe the arrangements by which the nerves of special sense receive impressions made upon them. In fact, we have nothing in relation to the physiology of the special senses, but only anatomical descriptions of the nerves themselves.

Thus, in relation to the sense of smell, we are told that the olfactory nerves pass through the cribriform plate of the ethmoid bone, and are distributed to the Schneiderian membranes; and then we are informed that these nerves convey the special sensation of smell. Nothing is stated in regard to the minute division of matter necessary in order that it may be conveyed to the termination of the nerves in question; nothing as to the way in which smelling is performed, and nothing in relation to the construction of the olfactory apparatus.

And so with the sense of sight. The whole theory of vision is entirely unnoticed, and no mention whatever is made of the eye.

The philosophy of sound, the physiology of audition, and the construction of the auditory apparatus, are also entirely ignored.

The physiology of taste, and the peculiar manner by which this sensation is received by the tongue, are likewise passed over in silence; and, finally, we have no reference whatever to the sense of touch.

We cannot avoid expressing the opinion that these deficiencies impair the completeness of Dr. Dalton's treatise as a text-book for students. All that he has stated in reference to the senses—those agencies by which man is placed in communion with the external world—can be found in any text-book of anatomy; and if the student does not find them described and explained in his physiological text-book, he will not be likely to have them elucidated in any other work ordinarily recommended for his study.

In the sixth chapter the *system of the great sympathetic* is considered. This chapter concludes the section devoted to the nervous system.

We hope that in a future edition Dr. Dalton will add to the usefulness of his volume, by supplying the deficiencies in this section which we have felt it our duty to notice. To do this would not add very materially to the bulk of the work, whilst it would greatly improve it both as a volume for reference and as a text-book.

The third section is devoted to the consideration of the subject of reproduction.

In the first chapter the *nature of reproduction* and the origin of plants and animals are considered. Prof. Dalton argues strongly against the theory of spontaneous generation—a theory, however, which cannot be said to receive the countenance of biologists of the present day. Many interesting facts in connection with infusorial and parasitic organisms are detailed, and a summary of the very important results of Siebold's and Küchenmeister's investigations with reference to certain entozoa is given.

In the second chapter *sexual generation*, as it takes place in plants and the different classes of animals, is briefly considered; and in the third chapter the *egg and the female organs of generation* are brought under notice.

Next the *spermatic fluid and male generative organs* are described. In chapter fifth *periodical ovulation* and the function of menstruation claim attention; and chapter sixth treats of the *corpus luteum* of menstruation and pregnancy.

These portions of the work are really models of their kind, both in style and matter, and are marked by so much originality as to convey a high idea of Dr. Dalton's ability as an observer. The remarks in relation to the corpus luteum—as might have been expected from Dr. Dalton's known interest in the subject—are full and to the point. As our readers are aware, he has by his investigations materially added to our means of distinguishing the corpus luteum of menstruation from that of pregnancy, and his views have met with the general acceptance of physiologists.

Chapters seventh to eighteenth treat of the *development of the egg* and appendages, of the whole process of *utero-gestation*, of the *development of the several parts and organs of the embryo*, and, finally, of *development after birth.*

In treating of the formation of the chorion, we have a much clearer, more exact, and more modern view presented, than that usually given in British and American text-books. The opinion of Valentin[1] and Von Baer[2], that this membrane is produced from the albuminous material which the ovum receives as a coating, during its passage through the Fallopian tube, is, we

[1] Handbuch der Entwickelungsgeschichte des Menschen, &c., pp. 38, 39.
[2] Beobachtungen und Reflexionen über Entwickelungsgeschichte, &c., 2d Abtheil, p. 185.

think, very properly—in accordance with the results of more thorough investigation—discarded, and the more philosophical view of Coste[1] adopted. According to this investigator, there are three chorions; the *first* is the vitelline membrane, which, after the ovum has entered the uterus, becomes covered with vegetations, and establishes the first relation of the ovum with the matter surrounding it. The *second* chorion is the external layer of the blastodermic membrane, which, being pushed back against the vitelline membrane, causes the atrophy and disappearance of the latter. The *third* chorion is formed from the allantois, which, being applied to the whole surface of the ovum, becomes covered with villosities, and causes the atrophy of the membrane surrounding it. This chorion is highly vascular, and is persistent to the end of gestation.

This theory of the formation of the chorion is that adopted by Robin, Longet, and other continental physiologists; and we are glad to see that it has become incorporated into a text-book of physiology in the English language.

The albuminous covering which the ovum receives in its transit through the Fallopian tube, probably serves a purpose as important as that ascribed to it by the physiologists we have mentioned, and that is, the nutrition of the ovum, prior to its arrival in the uterus. This view is sustained by Longet,[2] and derives additional support from the fact, also mentioned by this author, that the albuminous material in question entirely disappears before the ovum reaches the cavity of the uterus.

We can do no more than express our high appreciation of the manner in which Dr. Dalton has treated these portions of his subject. In fact, in reference to the whole of the third section, we should do violence to our own feelings were we to withhold our meed of praise for the truly admirable manner in which it is conceived and brought to its termination. As an essay on reproduction we know of nothing which excels it, and we regret that the length to which we have already extended this review forbids our noticing it more in detail.

In our remarks upon Dr. Dalton's volume we have endeavoured to render justice to its merits, and at the same time point out what we consider to be its deficiencies. Its great recommendation consists in its containing, to a great extent, the results of the author's own observations. There is, therefore, a freshness about it which those accustomed to refer to books made up entirely from the labours of others can scarcely fail to appreciate. Experimental results from frequent citation become hackneyed, and if we would preserve their value it is necessary that an observer like Dr. Dalton should now and then work the ground over again.

Conciseness and exactitude of expression are also prominent features in Dr. Dalton's treatise. No one can be at a loss to understand his meaning. There is never a word too much or too little; but what it is necessary to say, is expressed in as clear a manner as the English language allows.

We have as yet said nothing in regard to the illustrations, and the manner in which the publishers have performed their part. There cannot, we think, be two opinions on these points. The illustrations are so admirable, the type so bold and clear, the paper so excellent, that no one with the slightest perception of the elements necessary to make an elegant volume, can fail to recognize them in the work before us. Of the two hundred and

[1] Histoire Gén. et part. du Dévelopg. des Corps Organisés, p. 82.
[2] Traité de Physiologie, tome 2d, de la Génération, p. 148.

fifty-four cuts, all are original but eleven. Besides being well executed, they are, with scarcely an exception, true to nature; and the diagrams are so clearly and faithfully drawn, as to aid materially in the elucidation of the subjects to which they refer.

As to what we consider to be the deficiencies of the volume, we trust we have said nothing uncalled for, or calculated to convey an erroneous opinion of its character. As our readers have perceived, the defects are chiefly those of omission, and such as the author can with a little labour—irksome, perhaps, to an original mind—rectify without doing violence to his opinions. When this is done, we will have a text-book, not only useful as a work of reference, but one that can be conscientiously recommended as complete to the student.

To physicians, Dr. Dalton's treatise, even in its present form, can scarcely fail to be of service. Those who have in a measure kept pace with the advance of physiology, will find an epitome of its progress, and, perhaps, also some things with which they were not previously acquainted; whilst those who have not studied it since their pupilage, will find a mine of information, capable of being turned to practical advantage. To both these classes we recommend the work in question, confident that they will rise from its perusal with an exalted opinion of Dr. Dalton's literary and scientific abilities. W. A. H.

ART. XIV.—*Report on the Vital Statistics of the United States, made to the Mutual Insurance Company of New York.* By JAMES WYNNE, M. D., &c. &c. &c. New York: H. Bailliere, 1857. 4to. pp. 214.

THIS is a work prepared, as stated in the preface, for the convenience and advantage of life insurance companies. It is intended to gather all the recorded facts in respect to life and mortality, and to show the progress of population, the conditions of vitality, and the circumstances that increase or diminish it.

Dr. Wynne, with good reason, begins with complaining of the want of facts of this nature. He is not alone in his sorrow. Every investigator of this subject, from the beginning until now, has felt the same want, and mourned the deficiency of records in respect to human life and death, the circumstances that surround them, and the influences that bear upon them.

This subject, that should be the nearest to men's hearts, and familiar to all, which should demand the attention of legislators and statesmen more than all others, has yet attracted but little notice from the public, and is looked upon as hardly more than a mere speculation, fit for dreamy philanthropists rather than a matter worthy of the consideration of practical men. While other things of inferior importance to man have been watched, studied, and guarded, with careful vigilance, this has found few to care for it, and lend it an earnest encouragement.

The records of estates, the registries of lands, houses, barns, &c., are well provided for in almost every civilized country, and no real estate is transferred without the recognition of public authority; yet but few nations or states have established any law for the registration of the great events of humanity—birth, marriage, and death—within their borders. This is done by some of the nations of Europe, and a few of the States of our

Union. England has published nineteen large annual volumes containing the record of life and mortality for the year, and rich with mathematical calculation and philosophical deduction in respect to vitality and the circumstances that affect it for good or for evil. Scotland has published quarterly reports for four years. In this country, Massachusetts took the lead in 1842, and has sent forth sixteen annual reports of the births, marriages, and deaths. Rhode Island has published five, and Kentucky six reports. All these are large and full of matter of great value to the world, and especially to the student of vital statistics. Connecticut has published nine annual reports; New Jersey eight; Virginia one, including the facts of two years; South Carolina four; and New York two. All these are smaller than those of the three States first mentioned, and yet they contain facts of great importance to be known. Some other States are following in the track of these, and, we trust, will in due time make full revelations of life, its progress and its dangers, among their people. Vermont has already established a very satisfactory law for this purpose. Under its operation, the returns have been made to the government, and the facts are now in competent hands to digest them and make the requisite report. California has established a similar law, and we may now look for its first fruits.

It is deeply to be regretted, that some other States have begun this work, but have faltered and gone back. New York published reports for 1847 and 1848, but since that time its law has slept the sleep of death, and no further cognizance has been taken of it by the government or people. That so intelligent and enterprising a community, as that of the Empire State, should stop in such a work as this is a matter of wonder, at least to all who know their great and liberal doings in other things, and is a deep disappointment to the friends of this science of humanity everywhere. It is to be hoped, however, that the law is only resting temporarily, to rise again in a better form, and enter upon a noble and vigorous course through all coming years.

Pennsylvania once had a law, which not being satisfactory to those who were most interested in it or affected by it, was strangled almost at its birth, and of course produced no fruit. It is gratifying to be able to state, that the friends of this matter there have it still at heart, and hope, ere long, to procure the adoption of a law that will be acceptable to all, and produce its proper results.

New Hampshire a few years ago passed a law, but it was stillborn. It had no life, and no regard was paid to it by either rulers or people.

Several cities, Charleston, Washington, Baltimore, Philadelphia, Brooklyn, New York, Buffalo, Providence, Boston, and Lowell, and for ought we know, others, for a varied length of years, and some of them for a very long period, have published the annual reports of their mortality.

We have also occasional reports of the mortality of New Orleans, Memphis, Tenn., Troy, and Rochester, N. Y., and of some others, published for special purposes, on account of some epidemic or other cause that made it important that their sanitary condition should then be investigated and made known.

The mortality statistics of the United States for the year ending June 1st, 1850, published in connection with the last census, embraces the deaths, within that year, in the several States. This is the first attempt of our National Government to inquire into and to show the sanitary condition of the people; but we trust it is but the first of a series of decennial volumes of this nature, to be issued with the reports of every future census.

This is not a perfect work, nor does it pretend to be; but it is as complete as the facts that were gathered would allow, and these were probably as complete as the nature and character of the law that required them, and the means provided for their collection would permit. The facts were gathered by the marshals and their deputies, who were not presumed to be familiar with vital statistics, and the causes of death, and upon whom, for the first time, this new burden was placed, in addition to the usual and ordinary duties of their special office. Moreover, Congress unfortunately, without considering the nature and bearing of this work, the amount of the facts that were gathered, and their importance to humanity, ordered the superintendent of census to digest the facts, and print them in a volume of four hundred pages, and granted only a limited sum for this purpose. The superintendent of census, Mr. Dé Bow, therefore, was compelled to omit much that should have been spread before the world, and to curtail many others that would have been worth far more than their cost to the nation, if they could have been expanded to their due extent.

Although abbreviated and reduced, it is yet a work of great value, for it contains the record of a class of facts the like of which has not been given to the public to read in this country.

No inquiry was made by the marshals for the births, and no returns of them were made to the central office. The marriages and deaths were not all ascertained and reported. Some whole counties were entirely omitted in respect to these events, and in many others the inquiry was but partial, and the returns imperfect.

The incompleteness of the reports of these great facts in the census, is acknowledged by the superintendent, and it is shown by Dr. Wynne in the volume now under review. But the subsidiary facts that are stated: the causes of death, the age and sex of those who died, the comparative prevalence of the several fatal diseases, as to each other, and the seasons in which they occurred, these are reliable and important, and may be turned to good account in the investigations of life and mortality.

Dr. Wynne first describes the geographical territory of the United States, showing its physical condition, and points out the various sanitary and morbific influences. He gives a good account of the population, and their distribution as to age and locality in the several States, and of the widely different characteristics of the people. The increase of inhabitants from natural causes and from immigration, and the probable future of the people of this country, are ably discussed and clearly set forth.

Dr. Wynne indorses the opinion of Prof. Tucker, "that the increase of population is inversely as the density in the States." This is a general truth, especially when applied to agricultural States. But there are many circumstances and conditions beside unoccupied land that affect the growth of population. When the inhabitants of a country, exclusively agricultural, reach a certain density, and when all the land, that can be profitably cultivated, is so appropriated, then the surplus population go elsewhere for occupation and support, and growth is suspended. But if any other employments, as manufacturing, commerce, &c., are introduced, or if new methods of agriculture are adopted, and more labour can be expended upon the soil with advantage, and larger crops are obtained, then a new element is at work, more people are wanted, and the natives are retained at home, and if these are not sufficient to meet the demand for labour, others are brought in from abroad in proportion to the increase of the means of occupation. Thus the growth of population continues with various degrees of rapidity.

This is shown in the comparative increase of the population of Massachusetts and North Carolina, and some other States, as in the following table:—

	Population to sq. mile, 1840.	Rate of increase, 1840 to 1850.		Population to sq. mile, 1840.	Rate of increase, 1840 to 1850.
Massachusetts	94.58	34.81 pr. ct.	North Carolina	14.80	15.35 pr. ct.
New York	51.68	27.52 "	South Carolina	20.23	12.47 "
New Jersey	44.87	31.64 "	Virginia	20.21	14.67 "
Pennsylvania	37.48	34.09 "	Kentucky	20.76	25.98 "

The same is shown in different counties of Massachusetts. The counties of Berkshire, Franklin, and Hampshire had forty-nine inhabitants to the square mile in 1840. These were devoted mainly to agriculture. The counties of Essex and Middlesex had one hundred and ninety-four to the square mile, and these largely engaged in manufactures and commerce. During the ten years from 1840 to 1850, the former gained 15 per cent., while the latter gained 45 per cent. in population.

The difference in the rate of growth, in the same State, at different periods, is shown in the progress of Massachusetts in the two decades following 1830. In the first—1830 to 1840—starting with 78 to the mile, there was an increase of 20 per cent. But in the next, beginning with 94.58 to the mile, there was an increase of 34 per cent. This was due to the great increase of manufactures and trade and improvements in agriculture, which gave employment to a greater number of people.

If there were neither immigration nor emigration, if none come into the State except by birth, and none go out except by death, the increase or decrease of population is precisely the difference between these two classes of facts; and as, almost universally, the births exceed the deaths, there is a proportionate increase of population from that cause.

It is rare that any State, town, or district, however small, is unaffected by migration outwards or inwards. Almost everywhere, one or the other of these events is going on, and, most commonly, both. This acts as a disturbing element in all the calculations of the progress of population founded solely on the operation of natural causes. This difficulty would be obviated, if it were possible to determine, not only the number, but also the sex and ages of both the incomers and the outgoers.

The recent immigration from Europe, and especially from Germany and Ireland, into the United States, is greater than any movement of population from country to country within the reach of history. In 1850, there were in this Union 2,210,839, who were natives of other lands. Of these, 961,719 were born in Ireland, 379,093 in Great Britain, 147,711 in the British Provinces; making 67 per cent. from the British dominions. 618,299 were born in Germany, Prussia, and the Low Countries; being 27.9 per cent. of the Teutonic race. 20,299 were from Sweden, Norway, Denmark, and Russia; and 61,101 from France and the South of Europe.

These foreigners are not divided between the sexes, nor distributed among the several ages, in the same proportions as the people either of the country from which they came, or of that in which they now live. Those who leave their homes, and try their fortunes in new regions, are mostly males, and in youth and early manhood. The national reports of immigration found in the annual executive documents, at first gave only the numbers of

passengers from abroad in gross; but in later years they have distinguished the sexes, and the ages in quinquennial periods up to forty. These reports, for several years, are rendered almost useless by the want of summaries of the facts. The numbers of immigrants of each sex, and in each quinquennial period of life, are stated separately for each port of entry and each quarter of the year. Every reader, therefore, before he can use these facts, is obliged to add up these manifold items, running through thirty to fifty pages of the national report. In the last six years, this work is done by the Department of State, and the facts are easily understood and applied.

We have obtained these results for the thirty-seven and a quarter years ending with December, 1856, during which 4,364,652 alien passengers arrived by sea from foreign countries, whose sexes and ages are specified. 2,600,926 of these were males, and 1,763,726 females; being in the proportion of 147 males to 100 females, or an excess of 47 per cent. of the stronger sex. The native white population of the United States were in the proportion of 1029 males to 1000 females, or an excess of almost 3 per cent. of the former in 1850. Of course, the excess of males in the United States is increased by this large disproportion of that sex among the foreign immigrants. In Europe, there is an excess of females, being in Great Britain, Ireland, France and Germany about 3.5 per cent., and in Belgium, 6 per cent. We have no means of explaining this great difference of the distribution of the sexes in Europe and among the natives of this country.

The proportions of the sexes are far from being the same in all parts of this country. In New England, there is a slight excess—about 1 per cent. —of females; but in all the other sections the other sex predominates. In the new States, beyond the Alleghanies, there are about 8 per cent. more males, and in the territories this excess amounts to 172 per cent. This large proportion of males in the new States and the territories, is unquestionably due to immigration, which brings more of that sex than of the other.

No distinction is made, in the census of 1850, between the natives and foreigners in the United States, when classified according to ages. We have, therefore, no direct means of comparing them in this respect. But as, among the immigrants, there is a smaller proportion in the early and late periods, and, of course, a larger proportion in the middle period of life, than is found among the whole body of white population here, it necessarily follows that this disproportion of maturity above childhood and youth must increase with the lapse of time after their arrival here.

We find in the census of Ireland for 1851, the record of the ages of all who left the island, intending not to return, in the four years and nine months ending with 1855. With this, and with the custom-house records of all the immigrants into the United States through thirty-seven years and three months, from October 1, 1819, and with the facts of the seventh census, we are able to compare the ages of the new and the fixed population of this country.

Ratio per cent. in several Periods of Life.

Period of life.	White population in United States, 1850.	Emigrants from Ireland to all countries.	Immigrants in United States from all countries.
Under 10 years	28.64	12.90	15.49
10 to 20	23.17	25.97	20.81
20 to 40	30.91	50.93	53.33
Over 40	17.23	10.20	10.35

The great body of the immigrants are of the poor and labouring classes. There are a few adventurers, a few refugees from governments unsuited to their ideas, and some fugitives from justice. Some came to escape from distressing poverty, and very few from starvation. But the great majority were simply poor. They left their native lands to amend their low condition. Some merely hoped to get a better living; some hoped to gain a competence in a land of plenty, and a few came with the expectation of making their fortunes in this land of promise.

In 1850, the greater part—65 per cent.—of the foreigners, were in the old States, and only 35 per cent. in the new States and territories of the west. They prefer the regions which are the most densely peopled. In New York, New Jersey, Pennsylvania, Connecticut, Rhode Island, and Massachusetts —which had fifty to one hundred and twenty-seven inhabitants to the square mile—there were 1,224,000 foreigners; and in Michigan, Wisconsin, Iowa, California, and the territories—which had less than eight to the square mile—there were only 210,000. The Irish and Germans are especially disposed to congregate and live in masses, where they find their own countrymen, and in crowded places, where much business is carried on. They fear that they may not be able to obtain employment in the sparsely settled country, and prefer the more certain chance of obtaining it among a denser population. Consequently, only about a tenth of the Irish, and a little more than a quarter of the Germans, were in the new States of the northwest, and in California. Moreover, they seem to have a strong dread of the country even of the old States; about two-fifths of those foreigners were in the large cities, and no small part of the others in the smaller cities and the villages throughout the land.

This is a remarkable fact, seeing that the Irish certainly, and probably the Germans, lived in the country at home, and were accustomed to its employments only, and unused to the labour and habits of cities. According to the last census of Ireland there was a decrease of 1,695,950 in the rural districts, and an increase of 83,211 in the civic districts, between the years 1841 and 1851. In 1841 there were 66.1 per cent. of the total population engaged in agricultural pursuits, but in 1851 these constituted only 52.6 per cent. of the whole, showing a diminution of 13.5 per cent. in ten years. The proportion of those otherwise occupied increased in that time. In the four years and nine months ending with 1855, 288,191 males, and 292,092 females, over 15 years old, left Ireland. Of these 232,874, or 80 per cent. of the males, and 121,682, or 41 per cent. of the females, were farmers or farm labourers. From June 1, 1841, to December 31, 1855, 2,087,856 left Ireland, of whom 1,600,753 were destined for the United States.

The Irish immigrants, at least, are mostly of the poorer and the labouring classes. In 1841, 62.9 per cent. of the people of Ireland were dependent on their own manual, unskilled labour for support. In the ten next succeeding years these had decreased to 52 per cent. of all. The operation of the encumbered estates law consolidated a great many large farms, which had been divided and subdivided. These had been let to middle-men, and sub-let, in mere patches of an acre or more, to labourers, and gave a meagre subsistence to the most miserable of the peasantry. By this consolidation of estates, their houses were taken from them, and their cabins were destroyed, and they were compelled to find shelter and employment elsewhere. There was, therefore, a decrease of 355,689 of the fourth-class houses, mere "mud cabins, having only one room," within the ten years, 1841 to 1851,

being a loss of 72 per cent. of houses of the lowest class; while, on the other hand, there was an increase of 73,073 houses of the first, second, and third classes, or 8.7 per cent of the whole. The families which occupied the fourth-class houses were 35.1 per cent. of the whole nation in 1841, and only 12.2 per cent. ten years later.

Taking all of these independent facts together—that the great loss of population of Ireland, from 1841 to 1851, was of the agricultural class—that the great majority of those who left, in 1841 to 1851, were farmers and farm labourers—that the inhabitants of the rural districts only decreased—that nearly three-quarters of the poorest houses were destroyed—that there was a great decrease of those who depended on their manual labour for sustenance—and that 1,600,753, or four-fifths of all the emigrants from Ireland in sixteen years, 1841 to 1856, left with the intention of going to the United States—it is extremely probable, that the great majority of the Irish immigrants were poor, that they were occupied in cultivating the earth, and lived in the country districts, before they left their native land.

We have no means of knowing the original residence or social and pecuniary condition of the immigrants that come from other countries. But it is probable, that they were of a class similar to the Irish. This is corroborated by the immigration reports, which state that the largest part of all who arrive from abroad are farmers and labourers.

It would be naturally expected, that these foreigners would, immediately on their arrival, go to the country and seek such employment there as they were accustomed to at home. They seem to be the very men to go into the wilderness, to take up and break up the new lands, and convert them into farms for themselves, and find and establish homes of their own. Especially those whose whole capital is their physical strength and their capacity of labour, should do this, for it may be accomplished without cost. The national domain is open to whomsoever will take possession of and cultivate it, and no return is demanded until the government orders the sale, which may not be until the occupant shall have tilled it for some years, and earned sufficient to pay the small price that is required. Thus, in course of years, they could secure not only homes and subsistence, but a competence and even wealth for themselves and their families.

This, however, is done by but few except the Swedes and Norwegians, most of whom become independent farmers in the new States. But the Irish are not made for pioneers. Whatever may be their physical force, they have not the moral qualities of energy, enterprise, and self-reliance necessary to carry them beyond the pale of society, nor the requisite force to subdue the unbroken earth, and establish civilization in the savage regions. Their social nature and their want of courage keep them in the midst of numbers. They prefer, therefore, to occupy the subordinate positions of serving others, who will give them employment, superintendence and wages, in the cities and villages, to the solitary and self-directing independence of farming on their own account in the new territories. A large proportion of the Germans seem to have the same aversion to the unbroken wilderness, or even the country anywhere, and are to be found in the cities, towns, and densely peopled States.

Beside the disturbance in the law of population by the introduction of the foreign element into the United States, the natives are said to be very migratory, and move easily and frequently from State to State. There are no adults in the newest States that were born within their borders, and a part of all the people of every State were born elsewhere in the Union. In Iowa

and Wisconsin 70 per cent., in Illinois 53 per cent., in Connecticut 12 per cent., and in North Carolina 3.7 per cent., of their American population were born in other States; and 23.18 per cent. of all the natives of the country were living in States in which they were not born. This is supposed to be sufficient to justify the opinion that we are a restless people, without local attachments, and willing to change our homes for smaller motives, and more frequently, than the inhabitants of other countries. Yet this is not true in comparison with England and Wales, where in 1851, according to the census of that year, 24.87 per cent. of all the population were living in counties where they were not born. The Irish, although so ready to leave their country, are yet more fixed while they remain at home, for in 1841, only 4.96 per cent., and in 1851, only 8.92 per cent. of all were residing out of the counties which gave them birth. We have no means of knowing the condition of the people of the continental nations, but presume, that they are more fixed in their native homes than the Americans or the English.

The population is younger in the United States than in England and the middle and northern nations of Europe. A new people, or one that is growing, by immigration or natural increase, has a larger proportion of the young and fewer of the aged than one that is old or stationary.

Average Age of the Population.

Scotland, 1841	27.73 years.	Prussia, 1838	27.25 years.
England, 1841	25.41 "	United States, 1840	22.71 "
" 1851	26.40 "	" 1850	22.89 "

Similar differences, varying with the progressive nature of the population, exist between the old and the new States of this country. Emigration takes away the young and middle aged from their native districts, and leaves the more advanced in age behind. It carries to the new States the young and middle aged, who, at first alone, and afterward with their children, constitute the whole population. In New Hampshire and Vermont 32 and 35 per cent., and in Iowa and Minnesota 20 and 24 per cent., of all the people are over 60 years old. For every 1000 children under 15, there are over 60, in New Hampshire, 768; in Illinois, 73; in North Carolina, 153; and in Mississippi, 74.

The available and real power or effective force of any people depends on the proportion between the productive and the unproductive—the sustaining and the dependent classes. It may be assumed as a general law, that between 15 and 60 men and women are able to support themselves, and that before and after that period, they must depend on capital already accumulated, or now creating by others. That is, the labour of the forty-five years, from 15 to 60, must find bread and sustenance not only for that period, but for the preceding childhood and the subsequent old age. It follows that in any community, which has a larger proportion of children and of the old, the dependent bears more heavily upon the sustaining class. This varies very materially in different countries and States.

For every 1000 between 15 and 60, there were older and younger—

In Great Britain	729	United States	842
In France	598	Arkansas, Illinois, Michigan, Missouri	945
		New Hampshire, Connecticut, Vermont, North Carolina	816

In Arkansas, Illinois, Michigan, and Missouri, which in ten years, 1841 to 1851, had gained 494 per cent., the dependent were to the sustaining class as 945 to 1000. But in Connecticut, New Hampshire, North Carolina, and Vermont, which had gained only 18 per cent., these proportions were as 816 to 1000.

No inquiry was made by the marshals, who enumerated the people of the United States in 1850, as to the births, and of course they made no report of these facts to the government. The statement of the births in the volumes of the seventh census include, not the actual number of those who were born in the year, but only those who were alive and under one year old, on the 1st of June, 1850. By a singular assumption of legislative power, Congress ordered that these should be taken as the births during the year ending May 31, 1850. As this period, from birth to the end of the twelfth month, is the most fatal of human existence, except that of extreme old age, it is manifest that this number must fall far short of that which the law requires it to represent. Having no means of determining the ratio of mortality, at this age, in the several States, the error cannot be corrected, nor even an approximation made to the truth in this matter, except in regard to Massachusetts.

According to the National Census (Compendium, page 111), there were 23,805; but according to the State Registries, there were 25,651 born in Massachusetts in the year. Even the State returns fall short of the truth, for a few towns made no report, and others made reports that were evidently incomplete. The census gives 2.33 per cent. as the rate of births to the population of Massachusetts, and the State reports show, that, through the seven years, 1850 to 1856, the average rate was at least 2.9 per cent. The ratio of children under one year, by the law called the births, given in the census, varied from .29 per cent. in California, to 3.80 per cent. in Utah. Omitting these, which, from their peculiar arrangement of society, cannot be considered as representatives of others, the proportion ranges from 1.92 in New Hampshire, to 3.41 in Wisconsin, and that of the whole nation was 2.75 per cent. In all the new States of the northwest the ratios were over, and in all the States east of the Alleghanies, they were under 3 per cent., and in New England none exceeded 2.45. The proportion of births depends upon the proportion of females of the productive age in the population; as the last is not a constant fact, the other will vary accordingly.

Ratio of Births to Average Annual Population.

COUNTRY.	PERIOD.	ONE BIRTH TO—	
		Females, 20 to 40 yrs.	Total population.
England and Wales	1841-1851	4.4	30.7
France	1841-1856	5.7	36.6
Massachusetts, native . . .	1849-1856	9.2	51.5
" foreign . . .	1849-1856	3.9	17.7

Upon either basis of calculation, the ratio is larger in England than in France, larger in France than among the Americans in Massachusetts, and very much larger among the foreigners in that State than among the natives. Complete returns in Massachusetts would increase the ratio in native families, but probably not to the extent of England or France. The great

excess in foreign families in Massachusetts is due in part to the excess of females of the productive age, and in part to their more frequent marriage.

The females of the marriageable and productive age, 20 to 40 years, constituted 18.52 per cent. of all the immigrants in thirty-seven and a quarter years. They were 14.7 per cent. of all the whites in the United States, and 18 per cent. of those in Massachusetts, including the foreigners, in 1850.

In Massachusetts the Irish constitute 72 per cent. of all the aliens. They seem to be much more disposed to marry than the natives. In the three years 1854 to 1856, the marriages were one in 114.6 of the Americans, and one in 48.5 of the foreigners of all ages. They were one in 35.5 of those who were from 20 to 40 years old among the natives, and one in 25.1 of the same among the aliens.

The excess of births, in the Irish families, is not to be taken as evidence of a corresponding increase of their race in this country, for their infant mortality is also in a disproportionate excess; and it is yet to be seen, whether they will add as much to the effective adult population as the natives whose marriages and births are both in a lower ratio. So far as the records of Boston afford any data, they show that 18 per cent. of the children who were born of American parents, and 22 per cent. of those born of foreign parents, in 1856 and 1857, died within those years. This shows an infant mortality 22 per cent. greater among the strangers.

The connection of the states of prosperity and adversity with marriage and production, is discussed with ability and learning by Dr. Wynne. Unquestionably this is true as a general principle. In most civilized nations, men and women consider their power and means to sustain any new responsibility, before they assume it. Marriage is a new and fixed obligation. It necessarily involves a large increase of expenditure, with no prospect of diminution, but rather of further increase, through many coming years. When fortune favours, this burden is usually borne without difficulty; but when fortune frowns, there is trouble and sometimes distress. Men, therefore, marry more readily in times of prosperity, than when external circumstances are less promising. Thus, the labourer, when work is abundant and well rewarded, the man of business, when trade is prosperous, the farmer, when lands are easily obtained, and others when their plans of life are encouraging, engage in matrimony without fear; but when trade is dull and labour not easily obtained, or when crops are small and provisions not easily procured, or when land is costly or unproductive, they find reasons for delay of marriage and the assumption of any new burden.

The history of matrimony in some nations, whose records of marriage and of the corn exchange, of trade and finance, have been kept and published, show that these keep pace with each other; that while business is brisk marriage is frequent, and the contrary. These facts are shown by Milne, in his work on annuities, and in several of the reports of the Registrar General of England. The readiness with which employment can be obtained here, the high price of labour and the low price of provisions, induce the Irish in this country to marry at an earlier age than the more cautious and provident natives, or even their own countrymen at home.

The census reports give one birth in every 36.3 white inhabitants in 1850. Dr. Wynne very reasonably supposes, that this is much short of the fact, and that it even exceeds one in 35. The registration reports of Massachusetts show, that in the period from 1849 to 1856, inclusive, the births were one in 51.5 of the native, and one in 17.7 of the foreign population.

It should be considered, in connection with this last statement, that the natives include not only the native families, but also the children of the foreigners born in this country. If we could ascertain the numbers of the latter, and include them with the foreign class, there would be less difference, but yet an excess of the births in alien families. The experience of Boston throws some light on this matter. The average annual births in American families were one in 42.6, and in foreign families one in 20.6 of the average population of native and foreign origin, through the nine years, 1849 to 1857.

Rate of Birth to Population.

Country.	Period.	One birth to	Country.	Period.	One birth to
Austria	1834-37-40	29.0	Saxony	1832-1841	26.7
Bavaria	1836-1839	28.9	Sweden	1805-1835	31.0
England and Wales	1838-1855	30.47	Wirtemberg . . .	1833-1842	23.2
France	1836-1850	36.13	Massachusetts, native	1849-1856	51.5
Hanover	1832-1841	31.4	" foreign	1849-1856	17.7
Prussia	1839-1841	25.0	Boston, native . .	1849-1857	42.6
Russia	1852	22.4	" foreign . .	1849-1857	20.6

Baudin, in his valuable work on *Geographie et de Statistique Médicales*, adds the following to the above—

Baden, one birth in . . .	25.7	Naples, one birth in . .	27.3
Belgium, " " . . .	32.9	Portugal, " " . . .	29.1
Denmark, " " . . .	31.21	Sardinia, " " . . .	31.9
Holland, " " . . .	28.4	Switzerland, " " . . .	32.7
Holstein & Schleswig, one birth in	30.68		

Europe, average of twenty States and countries, one birth in . . . 29.09

These proportions are not constant in any country. "They varied in France, from one in 35.6, in the period from 1840–45, to one in 36.7, between 1845 and 1849. In Prussia, it diminished from 1834 to 1846, and rose again in 1849. A small increase, with various oscillations, is manifested in Hanover, Bavaria, Denmark, and Baden, and a decrease in Wirtemberg and Holstein. In Holland there was a decrease of 10 per cent. from 1840 to 1849; accompanied, however, with a similar diminution of marriages."

There seems to be a universal law that more males than females are born. As far as any records can be obtained in various nations, this is shown to be the fact. The excess of males varies with different people, and so far as known, this difference is the greatest in the United States.

How far this excess of males is due to, or influenced by, appreciable causes, is a question not settled, though one of deep interest. Here are very wide differences of excess. In South Carolina and Kentucky it is more than three times as great as in Massachusetts. It is about twice as large in Russia as in Sweden and England. It is forty per cent. greater in Austria than it is in Prussia. Comparing New England with Kentucky and South Carolina, we might suppose that the warm climate was more favourable to the male conceptions than the cold. But the excess in Virginia is only about half of that of Kentucky and Carolina. The largest excesses are found, so far as we have the record, in the farthest north and the farthest south, Russia and South Carolina. Yet Sweden and Norway are in the same latitude with Northern Russia; Prussia, Hanover, Saxony, and Great

Britain, are in the latitude of Central Russia, and all have a much smaller excess. From the facts here presented, there is no reason to think that climate has any influence in the determination of sex of the human child.

Births.

Country or State.	Period.	Males.	Females.	Total.	Males to 1000 females.	Per cent. excess of males.
Sweden	1796–1805; 1816–1835	1,335,798	1,275,007	2,610,805	1047	4.7
Norway	1801–1835	544,226	518,994	1,063,220	1048	4.8
Russia	1801–1833; 1842	27,087,237	24,774,368	51,861,605	1093	9.3
Prussia	1820–1834; 1839–1841	4,809,050	4,537,721	9,346,771	1051	5.1
Saxony	1832–1841	321,000	304,283	625,283	1059	5.9
Hanover	1832–1842	306,234	290,661	596,895	1053	5.3
Wirtemberg	1833–1842	366,513	343,661	710,174	1066	6.6
Bavaria	1836–1839	311,847	293,256	605,103	1063	6.3
Austria	1834; 1837–1841	3,474,596	3,229,386	6,703,982	1072	7.2
Belgium	1840–1849	670,344	636,165	1,306,509	1053	5.3
Florence	1451–1845	603,708	582,807	1,186,515	1035	3.5
France	1817–1851	17,078,694	16,105,321	33,184,015	1060	6.4
Scotland	1855–1858	185,210	175,463	360,673	1055	5.5
England and Wales	1811–1820; 1837–1856	7,112,849	6,792,455	13,905,304	1047	4.7
Europe	....	64,207,326	59,859,549	124,066,875	1072.6	7.26
Massachusetts	1842–1857	186,229	180,162	366,391	1033.6	3.3
Rhode Island	1853–1857	6,460	6,180	12,640	1045	4.5
Connecticut	1848–1857	39,859	37,174	77,033	1069.5	6.9
New York	1847–1848	35,226	32,503	67,729	1053	5.3
New York City	1853–1856	30,313	28,169	58,482	1076	7.6
New Jersey	1850–1856	44,387	40,789	85,176	1088	8.8
Philadelphia	1825–1855	151,443	139,829	291,272	1083	8.3
Virginia	1853; 1855; 1856	49,982	47,366	97,348	1052	5.2
South Carolina	1853–1854; 1856–1857	6,667	6,036	12,703	1104	10.4
Kentucky	1852–1857	67,871	61,491	129,362	1103	10.3
United States	....	618,437	579,699	1,198,136	1066.8	6.68
COLOURED.						
South Carolina	1853–1854; 1856–1857	20,865	19,651	40,516	1061	6.1
Kentucky	1852–1857	16,209	14,946	31,155	1084	8.4
Coloured	....	37,074	34,597	71,671	1071	7.1
Total	....	64,862,837	60,473,845	125,336,682	1072.5	7.25

Neither can we discover any evidence of the influence of season. In Massachusetts the largest proportion of males was conceived in February, the coldest, and in August, the warmest months; and the smallest in May, October and November. In Kentucky, through five years of record, the largest excess of males, 13 per cent., was conceived in April and June, and 11 per cent. in January, March, and November; the smallest, 2 per cent., was in August, and 6 per cent. in September. In England there is less difference both in the temperature of the seasons and in the excess of males born in different quarters of the year. The English reports state the births as to quarters, not as to months. An analysis of 4,783,441 births through the nine years, 1847 to 1855, shows that for every 10,000 females conceived, in each of the several quarters, and thereafter born, there were in the quarters ending with March, 10,429 males; with June, 10,469; with September, 10,449; and in that ending with December, 10,470. This is a small difference between the two extremes, the 1st and 4th quarters, embracing the colder months, and a still smaller difference between winter and summer. The largest excess is in autumn and spring. These proportions were not constant. The excesses of the males in the four quarters of the three years,

1853 to 1855, were severally 4.49, 4.87, 4.22, and 4.52. In the five years, 1848 to 1852, they were 4.1, 4.5, 4.6, and 4.8, per cent. And in the whole, as stated above, showing a general constancy, yet a variation which seems not to be due to the seasons. It must, however, be borne in mind, that the seasons vary less in Great Britain than in the United States. The mean temperature of the air at Greenwich, England, for the six years, 1849 to 1854, was, in the 1st quarter, 40.6°; 2d, 51.9°; 3d, 60.5°; and in the 4th, 44°; being a difference of only 20° between the winter and summer. The mean temperature of Massachusetts was, in the 1st quarter, 27.34°, and in the 3d quarter, 67.56°, of the same years, showing a difference of 40°.

The English reports include the cholera year of 1849, when, in the whole kingdom, 53,293, and in London, 14,137, died of the cholera, and an unusually large proportion died of diarrhœa. About four-fifths of these died in the third quarter ending with September. A comparison of the conceptions in this quarter, with the same in the years immediately preceding and succeeding, shows, that there was a diminished proportion of males conceived in that time of depression, alarm, and exhaustion. The excess of male conceptions in the healthy summer was in England 4.2, and in London 4 per cent., and in the cholera summer they were 3.9 per cent. in the whole nation, and 2.1 per cent. in the metropolis. The summer of 1847 was very sickly in London. Zymotic diseases, and especially typhus fever, were more prevalent and fatal than in other years. The excess of male conceptions was in that season only 2 per cent., being only one-half of that in other years. These differences are important, and tend to corroborate the doctrine of Villermé, and of Dr. Emerson, that the proportion of the sexes born depends, in great degree, on the health and energy of the people at the period of conception.

The effect of season, on the number and frequency of conceptions, occupies the attention Dr. Wynne, and he devotes to it one of his best chapters. The season of marriage is to be considered in this connection. If the births average about four to a marriage, as they do in England, including the second, third, and fourth marriages, and also the illegitimate births, then about one-fourth of the conceptions would take place within three months of the union. If the marriages are distributed equally through the year, each season would have an equal share of the first conceptions. But if the marriages are distributed unequally, as in Massachusetts, where, during twelve years, the average of November was 62 per cent. greater than that of March, and 53 per cent. above that of the other months; or as in Kentucky, where, in the last quarter, the marriages were 37 per cent. above, and in the second quarter 30 per cent. below the average of the year, we naturally look for a larger proportion of conceptions in the winter months than in the others. The 10,069,116 births in England, of which we have the record of the date, are distributed with singular equality through the four seasons, being in the ratio of 241, 258, 259, and 242, in the several quarters, per 1000, in the whole year. The 2,509,243 marriages were distributed less equally, being in the ratio of 2053, 2532, 2399, and 3016, in the successive quarters, per 10,000 in the whole. Here is an excess of 47 per cent. of the marriages in the fourth over those in the first quarter, and an excess of only 5 per cent. of the conceptions in the first over those of the second quarter. It would seem then, that in England, at least, the first conceptions followed the marriage at such various intervals as to show no necessary and immediate connection, as to time and season, between these two events.

There is more apparent relation between these events in Massachusetts, at least, a greater proportion of the conceptions take place at or near the season of marriage. These unions are distributed more unequally there than in Great Britain. Making correction for the different length of the months, through the recorded years, the marriages in November were to those in March, as 248 to 100; and the order of frequency was 1, November; 2, October; 3, May; 4, September; 5, January; 6, April; 7, June; 8, December; 9, February; 10, July; 11, August; 12, March—the highest exceeding the lowest by 148 per cent. The marriages in the cold season, October to March, exceeded those in the warm season, April to September, by only 11 per cent. With the same correction for the length of the months, the order of conceptions was, 1, December; 2, November; 3, January; 4, October; 5, February; 6, March; 7, June; 8, July; 9, May; 10, September; 11, August; 12, April. The excess for an equal number of days in the cold season over those of the warm season, was 18 per cent. within the period herein quoted.

In England there was an excess of 2 per cent. of marriages in the winter, and an excess of 6 per cent. of the conceptions in the summer. According to the calculation, this excess of marriages in the cold season should have produced two-thirds of 2 per cent. excess of births in the winter half of the year; but on the contrary, there is an excess of 6 per cent. in the warmer half—making practically an excess of 7½ per cent. in the summer; whereas Massachusetts has an excess of 10 per cent. of conceptions in the winter, independent of those due to the excess of marriages. Thus the facts we have been able to obtain, give no ground for the theory that season has any influence on conception. We then leave this topic in the trust that further experience and observation will develop and establish some law, if there be any, by which conception is influenced by climate or season.

The order of frequency of marriage in France, in ten years, 1831 to 1840, was: 1, February; 2, November; 3, January; 4, June; 5, October; 6, July; 7, May; 8, September; 9, April; 10, August; 11, March; 12, December. The order in Piedmont, in ten years, 1828 to 1837, was 1, February; 2, January; 3, April; 4, November; 5, May; 6, June; 7, September; 8, October; 9, August; 10, July; 11, March; 12, December. In Milan, Genoa, Naples, and Turin, the largest daily number of marriages was in February, and the lowest in December, in all but Naples, where the lowest was in March. The daily marriages were in France 3 times, in Milan and Genoa 6 times, in Piedmont 7 times, in Naples almost twice, and Turin more than twice as many in the highest as in the lowest months.

In Massachusetts, in the years quoted, there were 117,655 marriages, and 323,488 births, being 2.75 to a marriage of every degree. In England and Wales, in fifteen years, there were recorded 2,144,445 marriages and 3,612,532 births, or 4.015 births to a marriage. These, however, are not to be taken as the exact proportions of fecundity, for, as Massachusetts is more progressive in its population than England, a large proportion of the marriages were recent, and have not produced all their fruits. According to Hain and Moser, quoted by Baudin, the births to marriages were, in—

Prussia	1840 to 1849	4.16	Sweden	1821 to 1826	4.03
Austria	1830 to 1847	4.29	Low Countries	1825 to 1830	4.83
Hanover	1823 to 1843	4.03	Belgium		4.40
Bavaria	1836 to 1844	4.26	Geneva	1814 to 1833	2.75

Dr. Wynne states, p. 97, that marriage takes place earlier at the South than at the North. This corresponds with the records, which show that in

South Carolina 43.24 per cent., in Kentucky 44.7 per cent., in Massachusetts 23.60 per cent., in England 12.07 per cent., and in Ireland 17.4 per cent., of the females, when married, were under 20 years old; and in South Carolina 38.3 per cent., Kentucky 37.4 per cent., Massachusetts 46.98 per cent., England 49.18 per cent., and in Ireland 41.1 per cent., were between 20 and 25. These harmonize with the general law, that heat of climate tends to produce early development of the physical constitution, and hence leads to early marriage.

In discussing the subject of mortality, Dr. Wynne is compelled to feel the same want of records as in regard to births and marriages. Only eight States, and a few more cities, have gathered and published these facts, and none of the State reports are complete. Even in Massachusetts only one hundred and sixty-four towns, about half of all, including, however, about two-thirds of the population, have made so manifestly perfect returns of their deaths as to justify the calculation of the rate of mortality. We are not aware that "Bills of mortality are kept by most of the populous towns in the United States," as our author supposes; and if it be so, they are not published. We have made long and persevering inquiry for these; but except the few, whose annual and full reports are now before us, and some others whose reports are printed weekly or monthly, in detached parts, without summaries, we receive the general answer that no such documents are published in any available form.

The Mortality Statistics of the United States, prepared and published by the National Government for 1855, compressed, by law, into a volume of 400 pages, includes all the reported mortality in the year ending June 1, 1850, and also the causes, place, and time of death, the duration of sickness, and the sex, age, and nativity of the deceased. Mr. DeBow, faithful to the mandate of Congress, did not exceed his limits; yet he packed each of his pages so closely as to rarely have an equal in respect to economy of space. But even then he was obliged to omit much that was desirable for science, and would have been profitable for the people to know.

It was important to have the popular names of diseases, which the marshals collected in every part of the country and returned to Washington. No such opportunity has ever been presented before, and perhaps such will not occur again, of obtaining the common and local names of diseases throughout the United States. When Dr. Farr, by order of the Registrar General, prepared the nomenclature of Great Britain, he gathered all the popular names, amounting to about a thousand, and translated them into a scientific nomenclature, and classified them according to their natural affinities, giving each its appropriate place, and its scientific and intelligible signification.

Thus, he made a dictionary of popular nosology, in which he included all the common terms, and attached to each its proper synonyme. This explains all the common names, many of which are variable and uncertain, and some are merely local, and unknown beyond the narrow districts where they are found. The Registrar General published this most valuable paper in his fourth report in 1842, and again in his seventh report in 1846, and also in a pamphlet of instructions prepared for the local registrars and sent to all in the kingdom.

When the Committee of the American Medical Association, appointed for this purpose, prepared the nomenclature of diseases, they gathered all the common and popular names that were to be found in the registration offices of the States and cities to which they had access. They found eleven hundred and forty-seven of these names. These were arranged and explained

by their scientific synonymes, like Dr. Farr's, and published in the first Report of the *Transactions* of the Association, for 1846 and 1847.

The late census inquiry extended over a much wider field, and reached every State and almost every county and town in the United States, and without doubt every popular and local name of disease that could be supposed or imagined to be fatal was obtained. All of these are now in the files of the Department of the Interior, at Washington, and it is yet to be hoped, that Congress will order their publication, and present them to the world, with the location, State, and county, where they were found.

It is manifest and conceded, by the Superintendent of Census, that these records of mortality do not include all the deaths of the year, covered by the inquiry. In some States, some whole counties made no return of these events. Many of the deputy marshals, having charge of small districts, reported none. It is plain, from the very method of the inquiry, that there must be deficiencies. Many families remove and leave no trace behind. Strangers die and are forgotten. Some children die and are not recorded. In a large proportion of the districts and towns of the United States, no public mortuary records are kept, and family records are far from being general, and, moreover, even those which are kept, usually contain only the name and age of the deceased, and the time of death. Many of the persons who gave the information, however well they may have understood the statistics of the family and their condition at that time, were not familiar with the history of the year, and, therefore, could not give an account of even the deaths which may have occurred in the household. It was not to be expected, then, that this would be a perfect report of the mortality of the United States. In some States, especially in those whose people were accustomed to keep such records, and whose governments are accustomed to gather and publish them, the result of the national inquiry probably approached near to the truth. In Massachusetts, the national officers obtained the report of 19,409 deaths. The State reports, for the same months, give 19,848. Even this State return is incomplete, for several towns, containing about 30,000 inhabitants, made no return, and other towns containing about one-third of the population, made returns that were manifestly imperfect. Making correction for these defects, there should have been at least 21,000 deaths reported. Yet it must be granted that the national authorities came as near the whole facts as ought to be expected, as this was the first time that this information was sought by the Federal Government, and this was done through officers and in States entirely unused to the work.

We have no such means of measuring the probable correctness of the national statements of mortality in other States as we have in Massachusetts. Even Connecticut and New Jersey, whose registration laws were in operation in 1850, did not obtain the reports of their deaths with sufficient fulness and accuracy to afford a standard of comparison.

While it may be reasonably claimed, that all the statements in the volume of mortality statistics are correct in themselves, yet it must not be presumed that they include all the facts of this nature in any State, and they must not be taken as such; nor have they such an appreciable relation to the entire mortality of the year that they could be corrected and the whole number approximated. They must be considered as a collection of individual facts, correct and very important in themselves and in their relation to each other, but not as a whole. No deduction, therefore, as to the rate of mortality to the population in any State or district can be drawn from

these. No comparison of these rates in any one part of the country with that of any other part, or of this with that of any other nation, can be founded on these returns, and all such that have been or may be made only mislead. It was a mistake, therefore, into which the Census Department allowed itself to be drawn, when, in 1851, it calculated the rate of mortality on this basis, and published it in the report of that Department in 1852, and again calculated the rate in six divisions, and published the results in the abstract of the census, pages 12 and 140, printed by order of Congress in 1853. No man, having any knowledge of the law of population and mortality, can for a moment believe that the deaths were one in 100.29 in Vermont, and one in 51.23 in Massachusetts; one in 232.82 in Oregon, and one in 53.19 in New Mexico. These wide differences carry their error on their very face, and should not have been sanctioned by the government. Yet the errors were extensively spread; many newspapers and other journals republished them, and drew conclusions as to the comparative health and mortality of the several States, and of the nation; and some of these statements and conclusions were republished abroad, giving widely erroneous notions of the sanitary condition of this country and of its several parts.

Admitting, then, that this volume throws no light on the rate of mortality in the several States, still there are many other points on which much is to be gained from it. Although the facts which are here presented are only a part of the whole which had happened in the year investigated, yet it is not assuming too much to suppose, that the deficiencies are distributed in a similar proportion in the various classes in the same States, that they fall in a similar ratio on the males and on the females, and on the various ages of the deceased and the various causes of death, and that the ratio of the sexes to each other, of the deaths at any given age, to those at any other age, or of all ages, in any season to those in any other or all seasons, and from any class of disease to those from any other or all diseases, as stated in this volume, are the same as the similar ratios in the actual and total mortality in the same districts, counties, and States, in the year of inquiry.

With these premises we can, by the aid of the facts in the mortality volume, determine the proportion of the whole mortality of the country, or of any of the States or counties herein reported, that fell upon any period of life, or in any season, or was caused by any class of diseases. We may also compare the relative prevalence of any cause of death, and the relative force of mortality at any given age, or in any given season, in any State or district with the same in any other, or of the whole nation with the same in any other country; and if the year of inquiry 1849–50 is a representative year, if the diseases prevailed in the same ratio to each other then as in other years, and if the mortality fell in the same ratio on the several periods of life, or in the various seasons, or on the two sexes, then this volume of mortality statistics, of only a single year, becomes of very great value; and however we may feel the want of more complete information in this volume, we look upon it as a store-house of most important facts, the like of which has not been before offered to our people. Making what use we may of that which we now have, we will hope that at the next census, in 1860, a still further advance will be made, which shall fully represent the sanitary and vital condition of all parts of our country.

The marshals found and reported 323,023 deaths in the year preceding June 1, 1850; of which 172,878 were males, and 150,145 females. Here, as elsewhere, there was a preponderance of early mortality. While the

children under one year were 2.7 per cent., and those between one and five 12.3 per cent., of the whole living population, the deaths in the first age were 16 per cent., and in the second 21 per cent., of all that were reported. This is the general law of mortality, which is corroborated by all other records. In England and Wales, during the ten years 1845 to 1854, the deaths under one, and between one and five, were 22.8 and 16.5 per cent. of all; while the population at those ages were 2.7 and 12 per cent. In France, in the year 1853, the deaths in the first, and between that and the end of the fifth year, were 17.7 and 11.3 per cent. of all; but only 1.8 and 7.4 per cent. of the living were in these ages.

Baudin (*Geog. et Statist. Méd.*, II. 77) says, that in Saxony, Switzerland, Sardinia, Prussia, England, Holland, Sweden, Norway, and France, the average of the mortality was 4524 deaths, under 15 years of age, out of 10,000 of all ages; and of these, 2406 were males, and 2,118 females.

The males begin life with a majority of numbers. They have, at the outset, an excess varying from three to ten per cent. above the females. But their mortality is more than proportionately large, especially in early infancy. Without intending to give any rate of mortality for the United States, yet it may be profitable to compare the proportion of early mortality in the two sexes. The ratio of deaths in the year 1849–50 was—

Under 1 . .	Males 17.1	Females 16.4	per cent. of all.
Over 1 and under 5	" 21.0	" 21.5	"

The ratio of living was—

Under 1 . .	Males 2.68	Females 2.91	per cent. of all.
Over 1 and under 5	" 12.2	" 12.4	"

This shows, in the first period, a considerable difference, and, in the second, a slight difference, in favour of the females.

In England, the rate of mortality among the males was greater in the first five years, and slightly less in the period from five to twenty, than among the females.

The following table, taken and calculated from such of the reports containing the facts as we have been able to obtain, shows the excess of mortality of males and females at the several ages.

Excess of Ratio of Mortality.

Age.	England and Wales.	France.	Massachusetts.	Kentucky.	South Carolina.	United States.	Sweden.
1 year	...	...	Male	Male	Male	...	...
Under 5 . . .	Male	Male	Male	Male	Male	Male	Male
6 to 10 . . .	Male	Female	Male*	Male	Male	Male	Male
11 to 15 . . .	Female	Female	Female	Female	Male	Female	Male
16 to 20 . . .	Female	Male	Female	Female	Female		Male
21 to 30 . . .	Female	Male	Female	Female	Female		Male
31 to 40 . . .	Male	Female	Female	Female	Female	Male	Male
41 to 50 . . .	Male	Female	Male	Female	Female		Male
51 to 60 . . .	Male	Male	Male	Female	Male		Male
61 to 70 . . .	Male	Female	Male	Male	Male	Male	Male
71 to 80 . . .	Male	Male	Male	Male	Male		Male
Over 80	Male	Male	Male	Male	Male	Male	Male
Over 90	Male	Male	...	...	...	Male	Male
Total . .	Male	Male	Male	Male	Male	Male	Male

The rate of mortality in England and Wales through seventeen recorded years was—

Under 5	Males	7.356	Females	6.343
5 to 10	"	.916	"	.895

In France, through ten years of record—

Under 5	Males	8.455	Females	7.545
5 to 10	"	1.049	"	1.109

The comparative rate of mortality of the sexes, was against the females from 11 to 30 in England and Wales; from 6 to 15, from 31 to 50, and from 61 to 70 in France; from 11 to 40 in Massachusetts, through thirteen years of experience; and against the males in all the other periods in these countries, and in all periods in Sweden. There was a greater proportion of mortality reported in Kentucky, through five years, among the females from 11 to 60, and among the males at all other ages. The excess of female mortality is not large at any period, so that the total in all States and nations, from which we have the returns, the excess is with the males.

According to Baudin, the record of the mortality in ten European nations shows, "that there are three critical epochs for females, first, that of puberty, from 15 to 20; second, that of maturity, from 30 to 35; and, third, at the termination of fecundity, from 55 to 60." "There are also two critical ages for males, first that of virility, from 20 to 25, and that of the beginning of age, from 50 to 60.

So far, then, as we have been able to obtain the facts, we may infer that, during the years including the development of womanhood and a part of the procreative period, there is a small increase and excess of proportion of female mortality, but the excess of male deaths at the other periods is more than sufficient to counterbalance these; so that, in the whole, the rate is higher in the stronger than in the weaker sex.

This result corresponds with the calculations of the expectation of life. The English life table, prepared by Mr. Farr, and printed in the "Sixth Report of the Registrar General," gives a probability of longer life to the females at every age; and Mr. Neison, in his *Contributions to Vital Statistics*, page 8, gives them a longer probability at every age from 10 to 95, and to the males at the higher ages.

The Irish table quoted by Norton, *On Life Insurance*, gives a longer expectation to males from 20 to 35, and from 62 to 70, and from 72 to 79; but at all the other ages it is in favour of the females. The British government annuitant's table, and all other calculations which distinguish the sexes, show a similar result in favour of the female.

The same result is shown in the tables of the life annuities, and the terms of the companies which dispose of them. They ask a higher premium for annuities granted to females than to males, because the former have a longer life, and must, therefore, be paid through more years.

The specific intensity of life is stated by Mr. Neison, in his "Contributions," to be greater in the male from 10 to 23, from 29 to 38, and from 99 to 105; at 24 it is equal for both sexes; and at all other ages it is greatest for the female, in England and Wales. In Scotland, it is greatest in the female from 26 to 28, and from 39 to 98, at 100 and 104, in the rural districts, and from 15 to 92, at 99 and 100 in the city districts; while at the other ages it is greatest in the male.

Notwithstanding there are universally more males than females at the beginning of life, as already shown, the greater mortality of the former soon removes this excess, so that in all nations whose record is obtainable, except the United States, there are more females living at most ages, and

in all nations whose record we have, except the United States, Tuscany, and Sardinia, there are more females in the total of the population.

At the three censuses of the United States—1830, 1840, and 1850—there were, among the whites, more females between 15 and 20, and over 70, and more males at all other ages. Among the free coloured, there were more females at every age. Among the slaves, the males predominated from 10 to 15, from 20 to 70, and over 100; in all other ages, the females were most numerous. Each of the enumerations of Great Britain, from 1821 to 1851, shows an excess of males in the early periods, and a large excess of females in the subsequent periods of life; and in all the enumerations from 1801 to 1851, there is an excess of females in the total. In France, in 1851, there was an excess or females from 20 to 26, at 28, 30, 33, 35, 40, 44, 48, 50, and 54, and all ages above. At each of the eight enumerations from 1801 to 1851, the females show the largest numbers in the total population. In Ireland, Russia, Germany, Denmark, Hanover, Saxony, Wirtemberg, Switzerland, Italy, Belgium, Norway, and Sweden, the same excess of females is found.

The large excess of males in the United States is due, in part at least, to immigration, which, in thirty-seven and a quarter years, brought 147 males for every 100 females. If the 250,000 aliens, estimated, by Mr. Bromwell, in his excellent *History of Immigration*, to have arrived between the Revolutionary war and October 1, 1819, were in the same proportion, then there was an excess of 533,915 males over the females among the foreign immigrants, between 1783 and 1850. According to the law of mortality, the survivors of these, in 1850, must have been much less than the excess of 489,736 males found among the whites at that time. This large proportion of males among our people cannot be explained by any analogy of the population in other countries.

This proportion of the sexes varies with different countries, and in the same country at different periods. The excess of females in Great Britain was 2.2 per cent. in 1821, 3.7 in 1841, and 3.2 in 1851. In France it was 2.4 in 1801, 4.09 in 1806, 5.9 in 1821, 4.5 in 1831, 2.4 in 1841, 1.8 in 1846, and 1.08 in 1851. On which Boudin remarks, with singular truth, "in proportion to the time elapsed from the wars of the republic and the empire, we see the equilibrium of the sexes is re-established, which is inevitably destroyed, by the great destruction of men in the strife." In Ireland the female excess was 3.38 in 1841, and 5.38 in 1851. This change is doubtless due to the great emigration which carried off a larger proportion of males, and left a larger ratio of females behind. The excess of males over the females in the United States has varied very little in the sixty years from 1790, being at the seven enumerations successively, 3.7, 4.9, 3.9, 3.3, 3.7, and 4.6 per cent. In New England there has been an excess of females, varying from .82 per cent. in 1790 to 3.01 in 1820, and .87 per cent. in 1850. In all other sections, the excess is in the other sex at every decade. This male excess was larger in the early than in the later periods; and when the country or State is peopled exclusively with immigrants, there is necessarily a large preponderance of the stronger sex; but this gradually diminishes with the increase of the natives. Ohio had in 1790 an excess of 18.6 per cent. of males, which gradually decreased to 5.5 per cent. in 1850. The Middle States had an excess of 5.5 per cent. in 1790, and 2.78 per cent. in 1850. The South Atlantic States had an excess of 5.94 per cent. in 1790, and 1.04 per cent. in 1850.

The equation of life, or the period at which half are dead, is shown by Mr. Neison to be in favour of females. In England and Wales, of those

who survived their 10th year, one-half of the females would survive to their 54th, and of the males to their 53d year. In the Friendly Societies, which, Mr. Neison supposes, enjoy a greater longevity than the average of the people of Great Britain, he finds that, calculating from the 20th year, the equation is 1.1 per cent. in favour of males, but calculated from all other decennial periods, it is favour of the females in a much higher degree.

It is safe, then, to assume, from all these facts, both in Europe and in the United States, that females enjoy a greater length of life, and perhaps a greater degree of health, than the males.

There may be differences in the relative value of male and female life, caused by climate and locality, in the north and in the south, in the city and the country, in the mountain regions and the valley; but we have no records of facts to determine these, still less to demonstrate them. We must, therefore, wait for further observations, before any reliable deductions can be drawn as to the comparative effect of climate, and of local and endemic influences on life in the two sexes.

In the wide extent of the United States there is almost every variety of climate. Florida, on the extreme south, with a range of latitude from 24° to 29°, has an annual mean temperature of 67°; and Maine, on the extreme north, between 43° and 47°, has an annual mean heat of 40.99°. These are subject to still further variations of temperature. The average mean of winter in Maine is 18°, and that of summer in Florida is 80°. These are the averages of the observations at the various military posts in these States. At the most southern post in Florida, Key West, the mean of the thermometer was for the year, 76°, and for the summer 82.51°; while at Fort Kent, the farthest north, it was 37° for the year, and 11.36° for the winter. Beside these extremes for the entire seasons and years, there were days and weeks in which the mercury went far above and far below these points, and these were periods when the cold of the arctic regions, and the heat of the tropics, were experienced within the limits of the United States.

There are also all varieties of local influences within this Union—the seashore and the mountain ranges, the elevated, primitive, granitic formation, and the alluvium of the river banks, the arid waste of the desert, and the rich everglades of Florida. Unquestionably these varieties of locality and formation have a certain influence upon the life and health, the vital force, and the physical well-being of those who dwell among them. The effect of climate on the human constitution is everywhere admitted. It is supposed that life is shortened, and the energies materially diminished, by the extremes of heat and of cold. But we have not sufficient data to demonstrate these matters.

It is generally supposed that zymotic diseases, and those of the digestive organs, are more prevalent and fatal in warm countries, and diseases of the respiratory organs are more destructive in the colder regions. Here, as elsewhere in the field of vital statistics, facts are wanting to produce unquestioning faith. We have the Mortality Report of the United States in the year ending with May, 1850, and the Annual Registration Reports of Massachusetts for sixteen years and eight months, Rhode Island for five years, Connecticut for eight years, New York for two years, South Carolina for four years, Kentucky for five years, New Jersey for seven years, and Virginia for two years, all of which, except the last, state the causes of death. These are the only bases we have for even a conjecture of the comparative prevalence of the various diseases, or classes of diseases, at the north and the south. As none of these reports, not even those of Massachusetts, include

the whole mortality of the State or country, no inference can be drawn from their facts as to the rate of total mortality, or of that produced by any specified cause or class of causes. But, as it is presumed that the imperfections are distributed in nearly equal proportion over all the statements, it is reasonable to suppose that the given number of deaths from any specified cause, bears a similar ratio to the total mortality from that cause, that the given number from any other cause does to its total mortality; and that the total numbers destroyed by the various diseases stand in the same proportion as the numbers that are stated.

Hence a table deduced from these reports, showing the ratio of deaths from various causes to the whole mortality from all specified causes, in different regions, may be interesting and instructive. The analysis of the statements, in the National Mortality Report, of the deaths from zymotic, digestive, and respiratory diseases, in South Carolina, Georgia, and the five States bordering on the Gulf of Mexico, and in the ten extreme northern States, including New England, New York, Michigan, Wisconsin, and Iowa, and a digest of the same facts in all the reports of Massachusetts, Rhode Island, Connecticut, and New York, and also of South Carolina and Kentucky, furnish us with the facts in the following table.

According to the National Report there were, in the single year covered by the inquiry, 89,143 deaths from known and stated causes in the ten northern States, and 43,536 in the seven southern States. According to the several State Reports there were, in the four northern States above quoted, 307,070 deaths from given causes, and in the two southern States, 64,176. The eighteenth Report of the Registrar-General shows the number of deaths from the various causes in the seven years, 1848 to 1854, including 2,869,898 from all causes.

Ratio of Mortality per 10,000 *of all Deaths, from all Stated Causes.*

CAUSES.	NORTHERN STATES.		SOUTHERN STATES.		ENGLAND AND WALES.
	National census.	State reports.	National census.	State reports.	1848–1854.
All stated	10,000	10,000	10,000	10,000	10,000
Zymotic	4,110	2,950	4,220	4,735	...
All respiratory	2,784	3,319	2,192	2,595	2,436
All digestive	2,809	1,731	2,398	2,549	1,097
Consumption	1,799	2,250	441	838	1,235
All respiratory except consumption	985	1,035	1,749	1,757	1,201
Bronchitis, catarrh, influenza, laryngitis	55	57	175	169	505
Pneumonia	401	467	747	713	538
Pleurisy	30	55	69	29	23
Croup	242	260	304	425	98
Hooping-cough	173	110	332	252	213
Asthma	10	16	25	25	108
Cholera, cholera infantum, diarrhœa, dysentery	2,355	1,202	1,532	2,111	745
Dysentery	1,032	692	220	1,115	57
Jaundice, disease of liver	73	87	72	67	158
Teething	91	117	189	119	107
Worms	26	11	321	166	...
Fever, scarlet	304	455	187	304	396
" typhoid	288	598	443	681	435
" all others	460	65	1,487	735	15

For the purpose of showing, at a glance, the comparative prevalence of the diseases of the respiratory and digestive systems, all the diseases of those organs are included under these terms in this table. Croup, hooping-cough and influenza, and diarrhœa, dysentery and cholera, which are first included in the zymotic class, are, therefore, repeated.

Although the national record covers a wider field, seventeen States, it includes only a single year, and is, therefore, a less certain indication of the permanent prevalence of diseases than the State records, which include several years, but only six States. The cholera prevailed in New York and Louisiana, and dysentery in New England and New York, in the year of the census inquiry, and gave a larger proportion of mortality from those causes and from zymotic diseases than is found in those States in the average of years. Consequently there was a larger proportion of deaths from these causes, at the North than at the South, in the year 1849–50, while in the other years, reported by the States, there was a large excess in the warmer regions.

Looking, then, at the State registers, which, for our present purpose, give a more reliable basis of comparison, and taking the classes, we find that the zymotic and digestive diseases are relatively more fatal at the South, and the respiratory disorders more fatal at the North. But an analysis of these classes shows that this relation is very materially changed in regard to many specific disorders. Consumption, that terrible scourge of the colder climate, is not absent in the warmer. It destroys about one-fifth of all who die in these Northern, and one-twelfth of all who die in these Southern States. Taking away this disease, the respiratory class shows a larger proportion of mortality in the warmer section. And pneumonia, croup, and hooping-cough, show a very large excess of mortality at the South, their proportion of the whole being severally 53, 63, and 129 per cent. greater there than at the North. Fevers—continued, remittent, and intermittent—were largely, 1030 per cent., in excess at the South. Scarlet fever prevailed 49 per cent. relatively more in the colder States. The deaths from jaundice and disease of liver were more at the North, from worms fifteen times as prevalent at the South, and from teething about the same in both sections. Not much reliance can be placed on the statements in respect to the last three diseases, because, being generally connected with other disturbances of the digestive organs, they are frequently reported under other heads.

It is generally supposed, that whatever may be the peculiar dangers and diseases of any climate or region, these fall more heavily upon the strangers than upon the natives; that the immigrants are more subject to local and climatic influences, and to the endemic and epidemic disorders, than those who were born among them. But it is also supposed, that the constitutions of the strangers, by protracted residence in a new locality, become gradually accustomed and inured to these dangers that surround them, and so moulded and strengthened by the exposure as to be able to resist them more and more, and consequently their liability to suffer from, and to fall beneath, the attacks of diseases peculiar to their new situation, grows less and less, and ultimately they may be almost, and, perhaps, quite as secure as the natives.

We have very few records to establish or refute this opinion. Those who support it found their faith rather upon general observation than upon actual measurement or enumeration. On the contrary, we have one record of facts, which, so far as it goes, proves that the acclimation is rather ex-

haustive than strengthening to the human constitution. The experience of the East India Company furnishes the only reliable facts we have been able to find in reference to this matter.

From the records of the Bengal Government, copied into the *Journal of the London Statistical Society*, we have the facts of the following table:—

Rate of Mortality of Europeans residing in the East Indies.

Age at death, in years . . .	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 and over
Years of residence in East Indies .	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 and over
Mortality per 1000 of the class . .	19.9	20.8	16.6	23.4	35.4	36.4	48.6

From this, it would seem that the effect of climate is accumulative, and grows more and more destructive with the length of exposure.

The term acclimation is often used in a restricted sense, meaning merely protection from a single prominent and dangerous disease. The immigrants in Louisiana are said to be acclimated when they have passed safely through an attack of yellow fever, that is, if this disorder attacks men only once, they are acclimated so far as danger may threaten them from this cause. Dr. Barton says, "Perfect acclimation is only to be derived from having had the disease." But still the question remains unanswered, whether a man, having had the yellow fever, and thereby secure on that side, is also secured in any degree from the attacks of any other diseases which are peculiar to the same district—whether his constitution, in its power of endurance and resistance, becomes by this means, or by protracted residence, assimilated to that of the native; or does the protection from this fever, like the experience of the smallpox, measles, &c., stand alone, leaving the patient as subject to all other diseases as before?

In connection with acclimation there is another consideration worthy of the attention of the philosopher, that is, the effect of a new climate upon a race, through a succession of generations. How far, how securely, and how soon can a race be established in a climate different from that in which they originally lived and flourished? Are the children of the Northerner, born and raised in Louisiana, or in the Indies, endowed with a Southern constitution, with power to labour and enjoy life, to resist and overcome the attacks of disease, and to escape the peculiar dangers of the climate, like those whose ancestors through many generations have dwelt there?

The experiment of the Mamelukes to perpetuate their race in Egypt was a failure; their children perished, and they were obliged to replace them with new importations from the North.

Mr. Edward Clibborne, in an address before the British Association for the Advancement of Science, in 1856, asserted that the climate of the United States is exhaustive to the European constitution, and although the British and other races may endure our dangers for one, two, or, possibly, more generations, they ultimately die out, and our country must depend on new supplies of European immigrants from generation to generation to sustain its population, for "it is clear, from causes now in operation, that, no matter how favourable the circumstances of the European people in the United States were, their extinction, at no distant period, was certain, provided the connection of America with Europe ceased."

We think Mr. Clibborne is mistaken, both as to his facts and as to his inferences. We have seen no evidence nor record of the facts upon which

he bases his doctrine. But it is not our intention now and here to show his error, that is self-evident to Americans.

Considering how prone the people are to change their residence—to remove from the North to the South, from the East to the West, from the mountain regions to the river bottoms, from the interior to the seaside, from the rural district to the dense city and the reverse, and knowing that there are great differences in the local and climatic influences of these diverse places, it is singular that the effect of change of climate and locality upon the human constitution has received so little attention.

There is no want of observation and record of the physical condition of various places. We have learned, or are taking measures to learn, all the meteorological facts—the state of the air, the temperature, winds, quantity of rain, all that the thermometer, barometer, raingauge, &c., can reveal; but the relations of these facts to man's vital force, his power to labour, his health and energy, his comfort and longevity, these are yet to be studied and known.

Our government has taken great pains to ascertain the cost and profit of introducing animals and vegetables from other countries into the United States.

The government has lately been trying the experiment of using camels from the East, in Texas, New Mexico, &c. The effects of the climate, and the local influence of food and water and labour upon these animals there are carefully watched, recorded, reported, and published by competent officers and superintendents. But no such study, record and report are made of the men who drive them, nor of the people who go from other regions and try the experiment of health and life in that strange country and climate.

By national authority, men of the highest scientific character have been sent abroad to learn the best and most approved means of fortification and war, and of using weapons of destruction; they have been sent to remote rivers to determine their fitness for navigation; to the prairies, the deserts, the mountain passes, the savage wilds of the uninhabited West, to learn their fitness for roadways; even to distant nations, to know their aptness for commerce. Most, if not all of our States, and most civilized nations, expend money freely, through agricultural societies and other associations for the encouragement of the arts, and in the employment of naturalists, philosophers and practical men to ascertain the method and profit of raising various kinds of animals, grains, fruits, vegetables, &c., all for the benefit of the capital and the increase of the income of the people. But nothing, or next to nothing, has been done here to determine the effect of locality, climate, condition, or circumstance, upon the health and life of man, nor whether he can change these without impairing his vital force.

Dr. Wynne discusses the effect of occupation upon human health with much ability, and refers principally to Mr. F. G. P. Neison's late and valuable *Contribution to Vital Statistics*, of which the 3d quarto edition was published in London, in 1857. This is indeed the most important addition to this science. It should be in every public library and accessible to every student of these matters. Mr. Neison's chapters on the Friendly Societies, and their experience in respect to the health and longevity of their members engaged in the various employments, teach important lessons in respect to the value of life among the working mechanics and the better class of labourers, as compared with that of the whole nation collectively, and of the higher classes separately.

The Friendly Societies in Great Britain, like the Odd Fellows' Societies

in America, act as a sort of mutual health and life insurance companies. They, therefore, take cognizance, and keep a record, of the sickness and death of all their members. Mr. Neison, through the government returns, and by his own inquiry, obtained the record of upwards of 2,000,000 of years of life, with the sickness and death; carefully analyzing these records of mortality, and comparing them with the general reports of death, and aided by the experience of the Life Insurance and Annuity Companies, he shows that the members of these Friendly Societies have a higher expectation or probability of life than the average of the people of England, the peerage, or the subjects of Life Assurance. "The healthiest Life Tables have not shown anything so favourable" as these. He, therefore, seems to think there is an error in the opinions of Mr. Chadwick, the Health of Towns Commission, Villermé, Griscom, and many others who have written, to show that poverty and its conditions are attended with a greater amount of sickness and a higher rate of mortality than more comfortable circumstances. We believe Mr. Neison is the first writer of high authority, who has questioned their doctrine; and that he has done so with insufficient reason. His own calculations and results will not here be disputed. It is admitted without qualification, that the expectation of life in these Friendly Societies is superior to that in the other classes named; yet it by no means follows, that there is no difference of vitality in connection with different conditions or that that difference is in favour of the poorer and less comfortable classes. It must be remembered that these Friendly Societies do not include all the poor; they are practically composed of picked men, for Mr. Neison says:—

Although "they are almost exclusively the hard-working members of the community, chiefly occupied in the drudgeries and toils of the mechanical arts, and consequently exposed to the inclemencies of the seasons, excesses of temperature, impure atmospheres, constrained postures, and other conditions usually thought objectionable;" although "their incomes are very limited, affording but the scantiest and simplest means of support, and their habitations are of an inferior order, of the cheapest kind, and in the worst streets;" "yet it is necessary to make a distinction between them and the great bulk of the poorer classes of the country."—*Contributions*, p. 38. "The members, and those likely to be candidates, are intimately known, in their daily habits and ordinary health, to each other, and where evidently bad health exists, admission is refused"—p. 42.

Even after admission is obtained the member is not sure of his position until death, for

"The fact of continuing a member of such a society presupposes great regularity of habits, otherwise difficult circumstances and distress would ensue, and from inability to continue his subscription non-membership would follow"—p. 13.

"Although a few pence is all that is needed for his weekly or monthly contribution, it presumes a certain amount of frugality and industrial habit sufficient to separate him from the reckless and improvident who are more openly exposed to the vicissitudes—poverty, destitution, and distress—incidental to fluctuations in the demand for labour"—p. 38.

Thus, only the best lives are admitted, while the dissolute, the intemperate, and the vagabonds, the lowest health, and the poorest lives, are excluded; and if any, originally good and acceptable, when admitted, afterward fall into bad habits, they are sifted out, and the societies are constantly purged of their unprofitable members, for

"The blessing thus bestowed on the frugal and industrious workmen of the country composing the Friendly Societies, in having granted to them a prolonged duration of life is, no doubt, the result of their simple and uniform habits

of life, and the more regular and natural physical exercises to which they are habituated"—p. 43.

Notwithstanding this unquestionable evidence of Mr. Neison of the superior longevity of the permanent members of these societies, still neither he nor Dr. Wynne has shown that the privations, the narrow streets, the crowded houses, the bad air, and the exposures of even the regular, sober, and industrious poor, are more favourable to health and life than the better conditions and circumstances of the regular, sober, and industrious among the more prosperous classes; nor that the dissolute habits of the irregular, abandoned, and idle, do not waste their vital forces and lead to earlier death.

Mr. Neison's large collection of facts enabled him to calculate the expectation of life of persons engaged in various trades, and in his contributions he shows, that at the age of 20, there is a probability, that the labourers will live 47, bakers and miners 40, painters 36, and clerks 31 years longer.

We have no means of determining accurately the effect of employments on life in this country. The average of longevity of the males, in the various occupations, who died at the age of 20 and over, is given in all the Massachusetts reports of mortality, except the first two, and in all the reports of Rhode Island and New York. These include 56,326 persons, connected with 163 employments. One English report only, the fourteenth, for 1851, states the ages in connection with 359 occupations. This shows not only the number, 93,869, who died, and their ages, in quinquennial and decennial periods, but also the number of the living who were engaged in each of them.

It is not possible here to give the average longevity in each occupation, nor would it be instructive to do so, inasmuch as in many there were so few deaths, that their average would be worthless. But we have arranged them into classes upon the plan described in a former article in this journal, vol. xxix. p. 429, rather according to the degree of exercise required, and their exposure to the elements, and the powers brought into use, than in regard to any chemical or other character and influence of the material on which they operated, with the following result:—

Average Longevity connected with Classes of Occupations in Massachusetts, Rhode Island, and New York.

Classes of occupations.	No. of deaths over 20 years old.	Average age, years.
Cultivators of the earth	18,300	61.89
Active mechanics, working in open air	3,929	50.42
Active mechanics, in shops	5,434	47.60
Inactive mechanics, in shops	5,357	41.64
Mechanics, trades not specified	1,396	44.44
Employed on the ocean	3,214	46.06
Labourers, without special trades	11,023	44.22
Others employed abroad, expressmen, teamsters, &c.	1,064	42.93
Professional men, students, &c., working with the brain	1,982	48.11
Merchants, capitalists, financiers, &c.	4,627	47.34

We add to these a few of the leading employments in which there were deaths sufficient to lead to an approximation of their longevity in the United States and in England.

OCCUPATIONS.	MASSACHUSETTS, RHODE ISLAND, NEW YORK.		ENGLAND AND WALES.	
	Number of deaths.	Average age.	Number of deaths.	Average age.
Farmers	18,300	61.89	9,784	63.30
Ship-carpenters	408	58.22	327	65.34
Coopers	419	57.21	339	56.05
Carpenters	2,261	56.09	2,604	55.39
Clergymen	370	55.92	358	61.45
Lawyers	274	54.58	266	53.28
Physicians and surgeons	544	54.31	973	54.13
Blacksmiths	1,011	51.43	1,409	55.26
Tanners and Curriers	270	48.13	3,066	56.80
Masons	548	47.45	2,258	53.24
Seamen	3,205	46.01	1,752	47.59
Merchants and traders	2,334	45.32	2,301	52.94
Bakers	166	44.49	664	54.85
Labourers	10,407	44.39	1,501	56.88
Butchers	184	43.80	1,054	52.14
Shoemakers	3,458	43.41	3,236	56.88
Tailors	547	40.00	1,931	51.77
Painters	198	38.76	884	46.09
Machinists	552	38.17	329	44.22
Printers	198	32.03	298	46.21
Jewellers	136	30.52	148	50.26

Here is a remarkable difference in the average longevity of these classes in this country. The farmers live 22 per cent. longer than the active mechanics working abroad, 30 per cent. longer than the active mechanics in shops, and 48 per cent. longer than the inactive mechanics working under cover. It must be considered, however, that there has been a great expansion of most of the manufacturing employments, and of some this increase has been very great, within less than a generation. Shoemaking, the manufacture of machinery, printing, and some others, have grown rapidly within that time, and therefore the workmen connected with these constitute a progressive population, and have a larger proportion of youth and middle-aged men among them than the farmers. Labourers also have multiplied greatly, especially in Massachusetts, by the large accession of foreigners, who are in the younger and middle periods of life. Consequently the average age at death would be lower than in the older and less progressive professions, and lower than it will be, when these kinds of business shall be carried on without expansion to the completion of an entire generation. This progressive nature of several of these employments explains in some degree the great discrepancy between the average age in England and in America. There has been no increase among the labourers and shoemakers beyond the average of the nation in Great Britain. The living as well as the deaths in these occupations in 1851 included a due proportion of the oldest there, while here few had been long enough in those employments to become old, and, of course, there were few of the old to die. The longevity in a few of the occupations was nearly similar in both countries, but in most it was greater in England, and in some this excess was largely in favour of the elder nation. This is due, in good measure, to the reason above given, the more progressive nature of our population.

In calculating the average longevity, and comparing one employment with another in this respect, it is important to look at the way in which the professions are filled. Some are exclusively filled with young men, as the brakemen and conductors on railroads, coachmen, &c., who, after a few years, leave these employments and engage in others. Students, clerks, and a large portion of teachers are generally preparing to become professional men, merchants, &c. The average longevity of the few who die in these occupations is necessarily low, while the great majority pass to other pursuits, to die at a more advanced age, and swell the average age there. The average longevity of those who die in these employments is therefore no indication of their sanitary or morbific influence on those engaged in them, nor of their real expectation of life. In preparing the last two tables of the longevity of the professions, we included not only those who were actually engaged in them, but also those who, over twenty years old, were preparing to enter them; as with lawyers, physicians, &c., are included law and medical students, and with merchants are included clerks. Some other classes are made up, in great measure, of the aged and those who are beyond the middle of life. A large part of the paupers enter that class only through the door of age. They were self-supporters as long as their strength lasted; and when this failed, in declining years, their resources were cut off, and they were thrown on the public for sustenance. Many of the class of gentlemen, or men of independent means, but without special occupations, are those who created their fortunes in some employment, and in their later years retired from business and lived upon their former earnings. Of course both of these classes include a large proportion of the aged, and yet their average age at death is no indication of the healthful nature of pauperism or of wealth.

Since the living population is so differently constituted in various places and employments, the average age at death is often a very doubtful means of determining the value of life, and it should never be used, except with great caution and a careful consideration of the circumstances of the living. If the occupations or the countries which are to be compared on this basis are filled in the same way, and neither is more or less progressive than the other, and if both or all have been filled through an entire generation in which the oldest have had opportunities to try the full experiment of life, then the principle is a good one, and may be used with confidence; but otherwise it is a very loose mode of arriving at conclusions of the worth of life, and often leads to error.

We have not space here to even touch upon the many other important topics connected with human vitality and mortality of which Dr. Wynne treats in his volume. These, as well as those which we have here noticed, are worthy of the careful consideration of the philanthropist and the political economist, and we commend them to their earnest attention.

In reviewing this book, we have had frequent occasion to regret that its author could not have availed himself of all the records of facts in respect to life and death that have now been published. In all the uses of probabilities, especially when these are deduced from averages, it is of the utmost importance that these should rest on as wide a basis as is possible. Therefore we trust, that in another edition of this work, Dr. Wynne will be able to add all that has been observed, recorded, and published, and make his volume the grand store-house of the vital and mortuary statistics that shall then be known to the world. E. J.

ART. XV.—*A Treatise on the Pathology of the Urine, including a Complete Guide to its Analysis.* By J. L. W. THUDICHUM, M. D., with seven plates. London, John Churchill, 1858: pp. 429.

AMONG the special themes of study in the animal economy, none has attracted more attention, or produced a more voluminous literature, than urinary chemistry. It is, indeed, a tempting field of research. The fluid of which it treats is so easily obtained, and its relations to the general system are so obvious and so important, that it could hardly fail to force itself upon the notice of the student of physiology and pathology. There is but little danger that the importance of this study will be underrated. Our apprehensions are all in the other direction. One-sided studies are prone to lead their votaries to give undue prominence to them, to the neglect of other departments of inquiry.

Urinary chemistry has, indeed, specially manifested this tendency. Too exclusive deductions have been drawn from the condition of the discharges from the bladder. We have had brilliant theories built up on the foundation of the proportions of phosphates and chlorides passing away in the urine, and deductions affecting the most general considerations of pathology have been drawn from the determination of these salts. Yet we all know that a great quantity of phosphoric acid passes off through the intestinal canal, and there is no evidence against the supposition of a sort of complementary relation between the urine and feces in reference to the excretion of its salts, so that when deficient in the one they are in excess in the other. Urea, also, has been made the measure of the metamorphosis of nitrogenous matter in the body, and the physiological value of certain beverages has been deduced from the ratio of its diminution under their use. But why assume that urea is the only substance through which this waste gets exit? Why may we not as well infer that the change goes as far as ammonia, which is partly exhaled through the lungs, but chiefly passes off in the feces in the form of ammoniaco-magnesian phosphate. It is impossible to reason accurately with reference to any one function of the living body, until we know the state of all the others; so that it is absurd to attempt to build up a stately theory of diatheses upon the foundation of observations, however numerous and accurate, of the condition of a single secretion.

We are far from underrating the importance of the study of urinary chemistry. All we desire is that it shall be restricted within its proper limits, and that we shall not be led by science back to the point to which ignorance conducted our ancestors—to find all our pathology in a urinal. We hail any advances made in this department as contributions to the better understanding of the entire organism, but we ask that they may be checked by simultaneous observations of other excretions before they are received as interpretations of any general condition of the system.

It cannot be denied that, in spite of all the attention bestowed upon it, urinary pathology is still in a very unsatisfactory state. No one is more sensible of this fact than the careful and assiduous students of that medical speciality. It was, therefore, with no little satisfaction that we received the new treatise now under consideration. We must, however, caution our readers not to be misled by the title page. Those who expect to find an exclusive treatise on pathology, abounding in wire-drawn distinctions and brilliant speculations, are destined to disappointment. The order of the

book is that of a chemist, and it is a very full and satisfactory account of the present state of urinary chemistry and its relations to pathology. It entirely fulfils the author's promise in another clause of the title. It is truly a "Complete Guide" to the analysis of the urine. In this respect, we know of nothing in the language at all comparable to it. It is concise yet not obscure in its language and admirably lucid in its method. The author is manifestly thoroughly acquainted with the literature of his subject, and well versed in the manipulations of which he treats. He is no theorist, and has no hobbies to ride. Consequently, we have, as a result, a minimum of speculation and a maximum of fact.

We shall not attempt an analysis of a book which has so little superfluous matter. A running commentary on those points which particularly arrested our attention during the perusal of the volume may serve to give our readers an idea of its character, and for the rest we must refer them to the work itself.

The author begins with an account of the physical characters of the urine, under which head its clearness or turbidity, its odor, taste, and tints are discussed. For the latter, Vogel's scale is adopted and illustrated by a colored plate. A very useful table is also introduced in which the causes of each hue, and the most expeditious tests for its peculiar coloring matter, are given. In this also are included the tints imparted by the various foreign substances which reach this excretion through the medium of the circulation.

In reference to the vexed question of the acid reaction of the urine, the author is not quite so full as could be wished, and leaves the matter pretty much as he found it, attributing it in one place to the acid phosphates and in another acknowledging the presence of an unknown free acid. Lehmann's experiments with the baryta salts show conclusively that the acid phosphates are not always the sole cause of this reaction, which, he thinks, may also be attributed to hippuric and lactic acids. Our author gives Neubauer's formula for the estimation of this unknown free acid, oxalic acid being taken as the standard of acidity. This portion of the chemistry of the urine is in an extremely unsatisfactory state. The changes of the urine are briefly noticed. Allusions to Scherer's researches on acid reaction are scattered over various chapters, but we were disappointed in finding no continuous discussion of them in this place, where some account of acid fermentation was to be expected.

The question of alkalinity is more fully discussed. This is well known to depend upon fermentation within the bladder, when not caused by alkaline ingesta. The carbonate of ammonia, thus formed, gives rise to all the bad consequences of precipitated phosphates. In a note to this chapter the author gives some excellent practical hints in reference to the selection and preparation of test-paper.

Concerning the collection of the urine, and the determination of its quantity, we have some very sensible remarks. Great stress is laid upon the absolute necessity of accuracy in this particular, and, indeed, without it, the most elaborate analyses are of little value. To determine the pathological and physiological significance of any particular ingredient in the urine, it is imperatively necessary to know, not merely its *per mille* proportion, but the actual amount discharged in a given time. It is to stand as an index of waste or absorption, and any statement of mere proportion gives us no definite information. The relative proportion of water and solids may vary; so, also, there may be a difference in the relations of the latter to one another,

or a particular solid of grave pathological importance may owe its entire significance to its absolute quantity and its constant production.

The rules given for the determination of the solids are excellent. The method of evaporating the urine by heat is highly objectionable, because the acid phosphate of soda constantly decomposes the urea, giving rise to carbonate of ammonia, which passes off with the watery vapour. An accurate determination of the separate solids, therefore, cannot be made to correspond, in its amount, with the total weight as obtained by drying in this manner. The best method is unquestionably to evaporate over some hygroscopic substance *in vacuo*, and, indeed, this is the only plan admissible in any delicate analysis of organic substances. The direction of our author, to keep the vessel containing the solid residue hermetically sealed during the process of weighing, is by no means to be despised, as these organic bodies so rapidly absorb water from the atmosphere, that it is impossible to keep the weight constant long enough to determine it with accuracy.

The attempt to estimate the total weight of solids from the specific gravity of the liquid is utterly futile. Our author very clearly sets forth the amount and cause of the error in this method, even when the greatest precautions are taken. The ordinary mode of taking it renders any approach to accuracy absolutely impossible, the inevitable mistake being multiplied by the unknown quantity, carelessness in the operator. A plan of estimation which is liable to a necessary error of one-tenth of the entire amount of material estimated during health, and one-fourth during disease, has certainly no claims to anything like accuracy. The gravimeter, therefore, must be considered as a very rude and imperfect instrument of research, capable of giving some clinical information, but utterly worthless in the decision of all questions which require delicacy of determination. All inferences as to waste of tissue, which may have been drawn from observations made with it, must be ruthlessly rejected.

The chemical history of the various constituents of the urine commences naturally enough with urea. The instructions for its detection and determination are very explicit. To avoid the disadvantages of coagulating by heat albuminous fluids in which urea is to be sought, the plan of extraction with absolute alcohol is recommended. This agent, at the same time that it coagulates the albumen, dissolves the urea.

The method recommended by our author for the quantitative determination of urea is that originally devised by Liebig. This, as is well known, is accomplished by precipitating the urea with a solution of nitrate of mercury of known strength. Great care is necessary in the preparation of the reagents for this purpose, and the most minute directions are given by our author, guarding the student against every possible source of error.

Bunsen's method of determining the amount of urea, by the quantity of carbonate of baryta formed during its decomposition at the temperature of an oil-bath, is also given. This is the most elegant and accurate of all chemical methods for urea, none of the other constituents of the urine being similarly affected.

Davey's plan, which is also described, is objectionable, because uric acid is liable to the same change with urea. It consists in treating urine in a graduated vessel with hypochlorite of soda, the amount of urea being estimated by the quantity of nitrogen gas evolved. This plan is liable still further to the objection which lies against all volumetrical determinations of gases, as being too delicate for the common use of the profession. So many and so careful corrections must be made for temperature, barometric

pressure, &c., that it is a hopeless task for the medical practitioner to undertake.

The physiology and pathology of urea are very briefly stated. It is assumed to be the measure of "dissimilation," a term coined by the author to express the opposite of assimilation, but not synonymous with the common phrase "retrograde metamorphosis," inasmuch as it implies a change which may be effected in food as well as in tissue. Nothing is said of its relations to uric acid, and no positive theory of its origin is hazarded. In a subsequent chapter, on albumen, Bechamp's statement that urea is formed from albumen, by digestion in hypermanganate of potash, is repeated. Staedeler, however, has recently contested this discovery, insisting that Bechamp's urea is nothing but benzoate of potash.

For the precipitation of uric acid, nitric acid is recommended in preference to hydrochloric, on account of the greater solubility of the substance sought in the latter acid, as well as the increased tendency to the formation of confervoid growths which decompose the acid, a process entirely prevented by the use of nitric acid. For the volumetrical determination of this substance, Scholz's process with permanganate of potash is recommended. This is so uncertain, that no analytical chemist would be satisfied with a process for the determination of the commercial value of an article which was half so inaccurate. Nothing shows more conclusively the unsatisfactory condition of organic analytical chemistry than the expectation expressed by our author that two inevitable errors will balance one another. For the diagnosis of urates, a very simple table is given, perfectly unexceptionable, so long as they are found separately. The caution in reference to the necessity of dissolving the deposit in boiling water and filtering whilst hot, is necessary to be borne in mind when making these comparative tests.

The remarks on deposits of urates and of uric acid are well worthy of attention. They are very full and cover the whole ground. The precise pathological value of these sediments is carefully examined. Uric acid diathesis is rejected as a useless pathological myth, the presence of deposits being attributed to acid fermentation. The development of lactic acid by the action of a mucous ferment on the colouring matter, and the consequent decomposition of the urates, as shown so satisfactorily by Scherer, is adopted by our author, and has, indeed, gained very general acceptance from those who have studied the subject.

Under the head of creatine and creatinine we find nothing new, except some experiments to determine the quantities of these substances excreted.

In the chapter on chlorine we have some sound remarks on the errors inseparable from the method of estimating the salts by evaporation and incineration. In all organic analyses it is a growing conviction among chemists that incineration effects such changes as totally to mislead us in reference to the true constitution of their saline ingredients. Decomposition is inevitable, and no human ingenuity can rearrange the disturbed elements in their original order. In the volumetrical analysis of chlorine, preference is expressed for the method by nitrate of mercury, because the end of the precipitation is indicated by a change of colour, whereas, in the nitrate of silver process, it is only determined by the cessation of a cloudiness. This is easily obviated by adding a chrome salt to the urine, which, by the permanent crimson precipitate, indicates the moment at which all the chlorine is thrown down.

Physiologically, chlorine has a direct relation to vital activity. The greater that is, the larger is the amount of chlorine excreted by the kidneys.

Let the activity be either nervous or vascular, the result is the same. Indeed, copious draughts of water, which, in common parlance, stimulate the kidneys, produce the same result. This, however, looks to us more like a physical than a vital action. If we compare the tissues to a porous filter charged with saline matter, we shall find no cause of surprise in the fact that a large and long-continued current of water, passing through their pores, will wash out more salt than a smaller quantity occupying less time in the transit. Barral's idea of chlorides stimulating the elimination of nitrogen may possibly be accounted for in the same way, since they excite undue thirst and lead to copious draughts of liquids.

As for its pathological significance, the result of numerous observations is that chlorine is always diminished in acute febrile diseases, sometimes falling as low as one-hundredth of the normal quantity. Indeed, so constant is its relation to the pathological state of the system that it may be used as a prognostic, its decrease being an evidence of increasing morbid action, and its progressive augmentation affording a measure of convalescence.

Sulphuric acid has been observed to be increased when an exclusive meat diet has been used. There is no doubt that it arises in great part from the oxidation of albuminous materials, whether existing as tissues or introduced as food. The absence of this acid in muscle-juice seems to imply that the ultimate oxidation takes place either in the course of the circulation, or in the very act of secretion in the kidneys. Here, however, all is yet dark, and many more observations are needed to determine this question.

Phosphoric acid, as every body knows, is a constant and most important ingredient of the urine. The methods given for determining it (by acetate of soda and iron) are not satisfactory, and, indeed, at present there are difficulties surrounding every process for its estimation. The author himself acknowledges that the plan recommended is liable to an error of ten per cent. in the most careful hands, which may rise to twenty or thirty, should the operator be a little careless. Few chemists who have used it to any extent, have much partiality for it. Perhaps Kopp's plan of precipitating as yellow phosphate of uranium may succeed better. The common method of throwing it down as a double salt of ammonia and magnesia cannot be relied upon at all, when delicacy is desirable.

In speaking of the physiological signification of the acid, our author notices its relation to the ingestion of food, but is strangely silent in regard to the influence of the disintegration of nervous matter upon the quantity secreted.

The few paragraphs in which the pathological indications of albumen in the urine are indicated, are very brief but very much to the point. They contain, in a form perhaps too condensed for the ordinary student, a summary of what is known upon the subject, without any admixture of speculation. The general medical reader knows how very little that is.

There is an equal economy of language and speculation in the chapter on sugar, and, perhaps, some readers may complain of the *ex cathedra* manner in which vexed questions are decided upon. For example, Mialhe's notion of the influence of alkaline bicarbonates on the oxidation of sugar, is simply denied, without argument. With equal peremptoriness is Bernard's idea of the formation of sugar from albuminous substances in the liver disposed of; the presence of sugar in that organ, among the carnivora, being attributed to the inosite of the flesh they eat. Singularly enough, this is a question not touched upon in the controversy on glucogenia. The nearest approach to it is Lehmann's search for a glucoside which he con-

ducts with diastase and sulphuric or hydrochloric acid, neither of which acts upon inosite. In any event, however, this does not affect the opinion that the liver is the special organ for the formation of sugar; it only changes the raw material from which the glucose is to be made. Our author suggests that the milk-sugar in carnivora may be formed from inosite. The odour of diabetic urine is attributed to acetone, on the strength of the examination of a case in the hospital, at Prague.

Under the head of uroxanthine, we have great light shed upon a number of obscure cases in which a blue colouring matter, resembling indigo, has been observed in the urine. The observations of Kletzinsky and Schunck are cited to show the identity of indigo blue and indigo red with Heller's uroglaucin and urrhodin; and of indican (the substance which by oxidation yields indigo) with uroxanthine. The result appears to be that indican is an ingredient of normal urine, and the formation of indigo from it is only one of the accidents of oxidation. Virchow was able to make indigo from every specimen of concentrated urine he examined.

In treating of oxalate of lime, our author goes into a very full investigation of the crystallographic forms of that substance, and concludes that it belongs to the quadratic and not to the cubical system. He differs wholly from Golding Bird's second opinion concerning the dumb-bells, and restores them to their original position among the forms of oxalate of lime.

The book concludes with an account of urophanic substances, or those which, when introduced into the body, are expelled through the urine. There are many interesting observations in this chapter, but to discuss them would extend this notice to too great a length. A. S. P.

BIBLIOGRAPHICAL NOTICES.

ART. XVI.—*Reports of American Institutions for the Insane.*

1. *Of the New Hampshire Asylum, for the fiscal year* 1857–58.
2. *Of the Massachusetts State Hospital, Taunton, for the fiscal years* 1856 *and* 1857.
3. *Of the Retreat, at Hartford, Conn., for the fiscal year* 1857–58.
4. *Of the Bloomingdale Asylum, for the year* 1857.
5. *Of the King's County, N. Y., Asylum, for the fiscal year* 1857–58.
6. *Of the Western Pennsylvania Hospital, for the year* 1857.
7. *Of the Maryland Hospital, for the year* 1857.
8. *Of the U. S. Government Hospital, for the fiscal year* 1857–58.
9. *Of the Indiana State Hospital, for* 1857.

1. THE *New Hampshire Asylum for the Insane*, during most of the fiscal year terminating with the 31st of May, 1858, was under the superintendence of Dr. Jesse P. Bancroft, the successor of Dr. Tyler. "From the manner in which he has thus far discharged his delicate and onerous trust," says the report of the trustees, "the board feel confident that, under his supervision, the asylum will continue to flourish and make advances in respectability and usefulness.

	Men.	Women.	Total.
Patients in the asylum May 31, 1857	84	86	170
Admitted in course of the year	44	32	76
Whole number	128	118	246
Discharged, including deaths	40	37	77
Remaining May 31, 1858	88	81	169
Of the patients discharged, there were cured	17	17	34
Died	13	5	18

"Of the deaths, none have resulted from acute or epidemic disease. One occurred from apoplexy, one from epilepsy, one from consumption, two from general paralysis, and one from suicide. The others were the termination of long-continued insanity in various forms."

Aggregate of admissions since the asylum was opened	1,552
Recoveries	696
Deaths	158

The legislature of New Hampshire, in a spirit worthy of imitation in other States, at its session next preceding the issue of this report, appropriated four thousand dollars for the benefit of the indigent insane at the asylum. "This has been applied," says the report of the trustees, "as directed in the act providing the same, and some one hundred and thirty-five indigent patients have, for different periods during the year, received aid therefrom to the amount of from eighty to eighty-five cents each per week. Without this timely assistance very many of them could not have remained at the institution. A larger portion of the insane, from causes readily suggested upon reflection, are in more needy circumstances than is generally supposed, and have not, either in themselves or their friends, resources more than partially sufficient for their support. From facts which have come to the knowledge of this board, they are constrained to believe that the appropriation of last year was insufficient to answer fully the purpose of its intention, and that there is now a large number of insane persons scattered through different sections of the State, and indifferently cared for, who would be sent to the asylum could they be assisted to a like extent by the State."

2. The Third Annual Report, by Dr. Choate, of the *Massachusetts State Lunatic Hospital, at Taunton*, contains the following record of the movements of the patients at that institution in the fiscal year ending November 30, 1856:—

	Men.	Women.	Total.
Patients at the beginning of the year . . .	126	136	262
Admitted in course of the year	82	103	185
Whole number	208	239	447
Discharged, including deaths	68	81	149
Remaining at the end of the year . . .	140	158	298
Of the patients discharged, there were cured .	33	29	62
Died	14	26	40

Causes of death.—Phthisis, 11 (all females); maniacal exhaustion, 6; marasmus, 5; softening of the brain, 4; diarrhœa, 3; chronic mania, 3; dysentery, 2; apoplexy, 2; fever, epilepsy, scrofula, and suicide, 1 each.

"Twenty-nine deaths occurred this year from chronic diseases which had been operating for months, some of them for years; and were of a character necessarily fatal in their result. Of the remaining eleven, six were the consequence of that dreadful exhaustion which follows the stage of intense excitement in acute and typho-mania. But one death occurred from fever, and two from dysentery, so that on the whole we may consider that a high degree of health has existed among the inmates of the hospital during the year."

"The excess in the number of female patients, which last year amounted to eight per cent., has increased this year to more than twelve per cent., notwithstanding that the number of females discharged and died has considerably exceeded that of the males."

The extent to which foreign emigration has been directed towards the older States of New England within the last ten or fifteen years, is, perhaps, nowhere more conspicuously or accurately indicated than in the records of the institutions for the insane in that quarter of the Union. In connection with this subject we make the subjoined extracts from Dr. Choate's report.

"During the past year the proportion of foreigners admitted has decidedly increased. Previous to this year they have constituted thirty-two per cent. of the whole number; during the year just closed they have amounted to forty-one per cent. * * * In view of the very large number of foreign insane now supported by the State, and of the evils consequent upon their mixing up in the hospitals with our own people, it seems to be worthy of consideration whether, when the new hospital at Northampton is opened, some plan cannot be devised by which a separation may be effected, based upon this distinction. Under the present arrangement the most serious difficulty to be overcome in this and all other State hospitals with which I am acquainted, is that connected with social classification. * * * We have in the State hospitals people from every walk of life, many of them cultivated and refined, and the associations to which such are necessarily sometimes subjected, are neither agreeable nor useful. The foreign insane have different habits of life, different wants, need different management, and have a much smaller chance of recovery. It is an established rule that the provision made for insane people should be made to conform, as far as possible, to that to which they have been accustomed, and which they would have chosen were they at liberty. In this point of view the native and foreign insane need very different provision in many respects."

"A large portion of the Irish patients, who are nearly all supported by the State, slide after a while, if they do not recover, into an exceedingly sluggish and passive state of dementia, when they are not susceptible of remedial treatment, and can many of them be taken care of with perfect safety and propriety in some ward of the State almshouses devoted to the purpose, and under the care of a special competent attendant."

The most serious, humiliating, and revolting abuse to which the insane are still subjected, is their compulsory association, in many of our State hospitals, with deranged criminals. The old notions of essential affiliation between jails and receptacles for the insane, and of identity of management of the two classes of persons for whom those establishments are created, have been very much

modified within the last twenty years, but they have not, hitherto, been so far destroyed as to enforce a general practical illustration of their destruction.

If the felon be rejected from domestic social intercourse, from the school, the church, the asylum for the deaf, the asylum for the blind, and the general hospital, wherefore, in the name of reason, of propriety, of justice, and of humanity, should he be received into the establishment devoted to the treatment of mental disorders? In all the places of intercourse for the sane, the burglar and the homicide are discarded; but the institution from a liability to the kind and curative offices of which no one of us can claim exemption, still opens its doors to them, still intermixes them with the innocent, the educated, the refined.

With a state of public sentiment such as it ever has been in regard to hospitals for the insane, and such as, to a very great extent, it unfortunately and unjustly continues to be, the thought, to a sensitive mind, of becoming a patient in one of those establishments is of itself sufficiently painful and humiliating, without aggravation by the fact that the position will bring with it inevitable daily intercourse with persons under the ban of the law, and generally regarded as outcasts from society.

These remarks were suggested by a section of Dr. Choate's report, from which a portion is here extracted.

"During the past year two convicted felons have been sent to us from the houses of correction. Both of these men are of the worst and most dangerous class of criminals. They were sent to us, not with the expectation that they could be cured of their insanity, but because they were feared in the prisons. Besides these, two men sent the previous year from the State prison, one of them convicted of manslaughter, the other of highway robbery, still remain with us. * * * Their influence upon the other patients is in all respects bad. Their language is low and profane, and abusive of the officers and attendants. They need a different mode of treatment from the other inmates, which introduces a disturbance in carrying out the regulations of the institution. * * * The security of society, the safety and good of the insane, and the reputation of our lunatic hospital, imperatively demand that they should be kept elsewhere."

Report for 1857.

	Men.	Women.	Total.
Patients in the hospital Nov. 30, 1856	140	158	298
Admitted in ten months	123	84	207
Whole number	263	242	505
Discharged, including deaths	86	92	178
Remaining, September 30, 1857[1]	177	150	327
Of those discharged, there were cured	45	37	82
Died	17	26	43

Deaths from phthisis, 17; diarrhœa, 6; softening of the brain, 5; maniacal exhaustion, 2; fever, 2; disease of the heart, 2; marasmus, 2; chronic mania, 2; dysentery, apoplexy, disease of the liver, paralysis, and suicide, 1 each.

"Twenty-eight per cent. of the whole number of deaths since the opening of the hospital have been from phthisis, of which disease five males and thirty-four females have died. It is hard to account for this difference between the sexes; it is, probably, not accidental. Males, on the other hand, appear to be much more subject to a fatal issue from disease, particularly softening of the brain. Fifty-one per cent. of the deaths were from causes directly connected with the mental disturbance."

"The general health of the inmates of the house, throughout the year, has been good. Typhoid fever, generally of a mild form, prevailed to a limited extent during the winter and spring, and two deaths occurred from that cause. During the summer we have had an almost entire exemption from those acute affections of the bowels which usually prevail at that time. But three deaths from acute diseases have occurred during the year. * * * Next to this (phthisis), as a cause (of death), ranks that chronic diarrhœa which is so fre-

[1] It appears that the termination of the fiscal year has been changed from Nov. 30, to Sept. 30. The term embraced by this table is, therefore, only ten months.

quent and troublesome in old cases of dementia. This arises partly, probably, from the effect upon the digestive organs of the impairment of the nervous energy and vital force; partly from the manner of eating of such patients; and in some cases is undoubtedly aggravated, and even induced, by their habits of introducing into their stomach a variety of filthy and indigestible substances. * * * The patients received from Boston are mostly Irish. As a nation, at least as we see them here, they do not bear disease well. They have not that vital force which offers resistance to the last to the assaults of a deadly disease. They have not that *vis medicatrix naturæ*, which is the great healing power, so well developed as our own native population. Their previous mode of life, a life of excess, poverty, and exposure, is sufficient to account for this. Add to this, that the greater part of them are intemperate, which in a large number is the actual cause of their coming here, and we shall see abundant reason why more of them should die, and fewer recover, than among any other class."

"In previous years it has been our experience, as it has, I believe, been that of every other hospital in New England at least, to have the larger number of females; but, during the year past, the relative proportions of the sexes have been at once and decidedly reversed."

"Ten convicts, three of them from the State prison, and seven from the houses of correction, are now inmates of the institution. * * * One of them, during the past year, made a murderous assault upon an attendant, and very nearly effected his escape. He subsequently confessed that his object was murder, and through that, liberty. Another is an incendiary, much feared in this section of the State, and who ought to be kept in a place of the most perfect security. A third is a murderer of the most dangerous character, now under a sentence of twenty years' imprisonment for killing his wife. A fourth, a burglar by profession, attempted murder in the house of correction, before being sent here. * * * It is only the *dangerous* insane convicts who are sent from the places of confinement and correction to the hospitals. These are almost uniformly incurable cases. Since the opening of this hospital no convict sent from the State prison has recovered, and but two sent from the jails and houses of correction."

	Men.	Women.	Total.
Patients admitted since the opening of the asylum	444	445	889
Discharged, recovered	127	123	250
Died	62	83	145
Married	181	194	375
Unmarried	247	197	444
Widowed	16	54	70
From 20 to 30 years of age when admitted	118	129	247
From 30 to 40 " "	112	126	238
From 20 to 30 years of age when first attacked	146	149	295
From 30 to 40 " "	113	112	225

The following singular case is recorded in Dr. Choate's report for 1855. It was overlooked at the time that report was reviewed.

"One case occurred after the bite of a rabid cat. The patient, a lad of sixteen, in perfect, even redundant health, not known to have any hereditary predisposition to insanity, the victim of no evil habits, and of quiet, simple, frank disposition, though rather nervous and susceptible, was bitten by a furious cat, and almost immediately became insane. His case has been one of periodical mania. Subject to attacks of great violence, which continue two or three days, he is in the intervals calm, quiet, and nearly rational, except for a fixed delusion that he resembles, in the form of his face, hair, and some other respects, a beast. His case is now of several months' standing, and does not offer at present a prospect of complete recovery. The bite, which was a severe one upon the thumb, healed kindly."

A recent visit to Taunton afforded us the gratification of accompanying Dr. Choate through the several departments of this hospital. We had never previously seen it; and as much has been said of the imperfections of its original construction, our conception of its claims to commendation, we rejoice to acknowledge, was not commensurate with its actual merits. The apartments of the better classes of patients are handsomely furnished, and ornamented with pic-

tures; neatness and good order prevailed throughout the entire establishment; and, irrespective of the cultivation of its grounds, which time and labour are rapidly perfecting, and aside from some radical defects of construction, the institution may be classed among the best of those which have been founded by the several States. Of the original faults of construction, that of numerous "strong rooms" has been removed by their demolition and the conversion of the space which they occupied into ordinary dormitories. The imperfections in heating and ventilation have been overcome. One grand defect, architectural in its nature and consequently not of easy removal, yet remains. The hospital was erected about the time in which associated dormitories were most *à la mode;* and this fashion, as in the case of many others, was carried to an extreme. We have never believed that the welfare of the patients in an institution like this can be promoted by increasing the number in associated dormitories above from twenty-five to thirty-three per cent. of the whole. But, in his report for 1856, Dr. Choate states that there were 158 patients in the department for females, while the number of single sleeping rooms is only fifty-six. No vigilance of attendants can entirely overcome the difficulties and the annoyances, not to say the dangers, of such enlarged association.

3. The professional banquet to which Dr. Butler, of the *Hartford Retreat*, this year invites us, is mostly on the tables.

	Men.	Women.	Total.
Patients in the Retreat, April 1st, 1857	99	107	206
Admitted in course of the year	67	77	144
Whole number	166	184	350
Discharged, including deaths	64	78	142
Remaining, April 1st, 1858	102	106	208
Whole number of cases admitted since 1824	1545	1721	3266
Discharged, recovered, "			1582
Died "			337
Whole number of persons admitted "	1025	1125	2150
Of these there were admitted a second time	161	152	313
Of the 313, there were admitted a 3d time	30	46	76
Of the 76, " " 4th "	13	16	29
Of the 29, " " 5th "	5	10	15
Of the 15, " " 6th "	4	4	8
Of the 8, " " 7th "	1	1	2
Of the 2 there was admitted 9 times		1	1
Between 20 and 30 years old on admission, in 14 years	207	296	503
Between 30 and 40 " " "	217	261	478
Between 20 and 30 years old at 1st attack, 13 years	247	369	616
Between 30 and 40 " " "	158	178	336
Married, of those admitted the last 15 years	398	516	914
Unmarried, " " "	550	519	1069
Widowed, " " "	47	159	206

Causes of death this year.—Exhaustion, 4; consumption, 2; diarrhœa, 2; marasmus, general debility, catalepsy, disease of stomach, suicide, epilepsy, and disease of brain, 1 each.

In the course of the year, a second story was added to the building for excitable females which was erected three years previously.

"There are many objections," says Dr. Butler, "as well as an obvious impropriety in designating as 'lodges,' or 'strong rooms,' any department of a lunatic hospital,[1] especially where, as in our case, these rooms, which have at large expense been constructed for the noisy and excitable, are confessedly among the most pleasant and cheerful of the institution. Strange as it may seem, there still lingers in the public mind an impression that there is attached to this, as well as to all other lunatic hospitals, a class of rooms for violent patients, akin to the old-fashioned dungeon in their construction and arrangements. We learn

[1] What does the doctor think of the term "*lunatic* hospital?"

this from the extraordinary inquiries occasionally made of us. These apartments are a conclusive answer. The comfort and enjoyment afforded by them, the respect paid to the pictures, &c. &c., by which they are ornamented, with the general effect that the whole arrangements produce in the minds of all the patients, especially of the convalescent, are a satisfactory comment upon the wisdom and liberality of their construction."

4. Dr. Brown, in his report for 1857, gives the following numerical results of the operations of the *Bloomingdale Asylum*:—

	Men.	Women.	Total.
Patients in the asylum January 1st	64	80	144
Admitted in course of the year	65	63	128
Whole number " "	129	143	272
Discharged, including deaths	62	64	126
Remaining, December 31st	67	79	146
Of the patients discharged, there were cured	29	20	49
Died	7	8	15

Causes of death.—General paralysis, 5; pulmonary consumption, 4; puerperal mania, 2; apoplexy, 1; chronic disease of the brain, 1; gradual exhaustion and abstinence, 1; erysipelas of the head, 1. The patient last alluded to "had been a resident in the asylum thirty-six years, having, until her short and fatal illness, enjoyed a remarkable exemption from physical disease."

5. Dr. Lansing, who had been for some months connected, as its Resident Physician, with the *King's County* (N. Y.) *Lunatic Asylum*, withdrew from that institution, and was succeeded, on the 7th of May, 1858, by Dr. Edward R. Chapin, the author of the report now before us.

	Men.	Women.	Total.
Patients in the asylum July 31st, 1857	97	141	238
Admitted in the course of the year	86	115	201
Whole number " "	183	256	439
Discharged, including deaths	75	96	171
Remaining July 31, 1858	108	160	268
Of the patients discharged there were cured	34	42	76
Died	14	13	27

Causes of death.—Phthisis, 9; meningitis, 2; apoplexy, 2; old age, 2; erysipelas, dysentery, cerebritis, hemiplegia, atrophy of brain, softening of brain, atheromatous disease, general paralysis, epithelial cancer, chronic diarrhœa, hematuria, and dropsy, 1 each.

Of the 268 patients remaining in the asylum at the close of the year, 187 were foreigners, and 81 natives of the United States. Of the foreigners, 139 were from Ireland, 26 from Germany, and 18 from England.

The number of patients at this institution has been gradually increasing for several years.

6. From the report of Dr. Read, of the Department for the Insane in the *Western Pennsylvania Hospital*, we take the following statistical items for the year 1857.

	Men.	Women.	Total.
Patients at the beginning of the year	14	9	23
Admitted in course of the year	53	34	87
Whole number " "	67	43	110
Discharged, including deaths	19	17	36
Remaining at the end of the year	48	26	74
Of the patients discharged, there were cured			23
Died			6

"Four of those who died were residents of the hospital for periods varying from six to sixteen days; and two, less than two months.

"The health of our household has been eminently good. We have enjoyed a singular exemption from sickness, but one patient having been prostrated by disease induced after admission.

"The number of patients has largely increased during the past year. The ward recently constructed was soon occupied, and all others have been filled to their utmost limits. * * * * In Western Pennsylvania there are over twelve hundred insane, and not two hundred enjoying hospital care; the remaining thousand drag out miserable lives at home, or in loathsome cells of jails and poor-houses, under the care of unpaid or reluctant nurses. The other hospitals in the State are filled; and to the enlargement of this building or the erection of another, can these unfortunate men and women only look for alleviation of the evils and miseries they are compelled to endure."

In our notice of a former report from this institution, it was mentioned that a farm upon the Monongahela River had been purchased, with the intention of erecting thereupon a distinct and complete establishment for the insane, as a substitute for the apartments now occupied in the General Hospital. Since that time, the Board of Managers have determined to obtain another site, less secluded and more easily accessible by railroad. The construction of the new buildings is consequently postponed. Improvements, meanwhile, are constantly being made in the premises now occupied, rendering them more comfortable to their inmates, and enlarging the resources for the moral treatment of the patients. A library has been established and has already been increased, by donations, to several hundreds of volumes. Musical entertainments have been given; and religious exercises upon the Sabbath have been instituted. "More than one-half the female patients have been induced to occupy their time in reading, sewing, knitting, fancy-work, or assisting the attendants in the household duties of the wards. * * * In their apartments, cheerfulness and industry have taken the place of the gloom and idleness that formerly prevailed." A less encouraging account is given of the men: and such must the account probably continue to be, until they shall have been removed to an establishment connected with a farm, upon which they can labour. "The occupation of the male patients," continues the report, "is limited almost entirely to reading and assisting the attendants in their labours. We find it impossible to prevent those who have nothing to do, or to interest them, from falling into careless habits and vicious practices; and we hope provision will be made for the occupation and amusement of this class of patients, and feel satisfied that money thus expended would bring a good return. All would be rendered more comfortable; health would be improved; their irritability expended in useful exercise; they would be more easily managed; an air of contentment would pervade their apartments, and our efforts for their care and restoration would be much more efficient and valuable."

7. The numerical records for the *Maryland Hospital for the Insane*, from the 1st of January to the 30th of November, 1857, are as follows:—

	Men.	Women.	Total.
Patients in the hospital Jan'y 1st . . .	54	56	110
Admitted in the eleven months	26	17	43
Whole number	80	73	153
Discharged, including deaths	24	21	45
Remaining, Nov. 30	56	52	108
Of those discharged, there were cured . .	5	7	12
Died	4	2	6

Besides the above, twelve cases of mania-à-potu were under care. Ten of them were discharged, recovered; and two remained in the hospital. Patients with this disorder have not been received previously to this year.

"Two maladies, diarrhœa and dysentery," remarks Dr. Fonerden, "have usually required much medical attendance in the summer and fall. But this year no cases of either have been violent or of long duration. There have been fewer inmates with wornout constitutions than we have had in some previous years. Partly for this reason the health of the institution has been better than ever before."

A very large proportion of the patients in this hospital are permanent residents, with chronic and incurable mental disorder. No less than forty-three of them were admitted prior to the year 1850.

8. The report of the *Government Hospital for the Insane*, for the fiscal year ending June 30, 1857, is not published separately, but is included in the documents accompanying the message of the President of the United States; being introduced as a part of the report of the Secretary of the Interior, under whose official surveillance the institution is placed.

	Men.	Women.	Total.
Patients in the hospital July 1, 1856	54	39	93
Admitted in course of the year	25	27	52
Whole number	79	66	145
Discharged, including deaths	19	16	35
Remaining, June 30, 1857	60	50	110
Of the patients discharged, there were cured	2	5	7
Died	8	8	16

Instead of giving the causes of death in the usual manner, Dr. Nichols arranges the fatal cases in a table, which, from its originality, deserves a transfer to our columns.

"Chronic, organic, and functional degeneration of the brain, irregular in character and extent	9 cases.
Same, with phthisis	2 "
Same, with paralysie générale	1 case.
Same, with menorrhagia	1 "
Same, with hemiplegia	1 "
Same, with epilepsy	1 "
Same, with pneumonia	1 case."

The few recoveries relative to the whole number of patients is easily explained. But about one-third of the hospital building has been completed. The apartments in this are barely sufficient comfortably to accommodate the old cases of dementia which, belonging to the army, the navy, and the indigent classes in the District of Columbia, have been removed to this institution from the various receptacles in which they were placed prior to its establishment. All the patients who died were demented. Only one of them had been insane less than two years; and the average duration of their mental disorder was upwards of nine years. Of the fifty-two patients admitted in the course of the year, the insanity of but twenty of them had existed a less term than twelve months; while that of the remaining thirty-two, varying from one year to fifty years in duration, made an average of more than eight years.

"The fatal case of pneumonia, herein reported, is the only acute disease that has ever occurred among the patients; and not only have the inmates enjoyed an exemption from grave physical disorders, with the exception named, but other instances of indisposition have been trifling and infrequent."

"No suicide nor other serious accident of violence has occurred since the hospital was opened for the reception of patients, in January, 1855, though the household has never been without its suicidal members, and the facilities for violence, both to one's self and to others, have always been extraordinary, owing to the work of building and other improvements, which has never been wholly suspended."

The progress made in the erection of those portions of the hospital edifice which have been commenced, is indicated by the following extract: "If the remainder of the building season (in 1857) should be mild, the three sections of the wings now under way will be roofed in before its close, and the walls of the centre building so far advanced that they can be finished and covered, in the spring, before the plasterers have completed their work in the wings." A mechanic's shop, and a substantial and convenient brick stable, arranged according to the most approved method, have been completed.

In these times, when, in some of the States, we have seen the interests of

benevolent and charitable institutions either utterly neglected, or rendered subordinate to the capricious policy of political partisans, it is especially gratifying to perceive that this hospital, the representative of our federal philanthropy, has, from its very inception, been sustained and fostered, with undeviating interest and an effective and enlightened zeal, by the Department of the Interior.

9. It becomes our duty to chronicle another case in which the baneful influence of political strife has extended to some of the benevolent institutions of our country. A flourishing institution for the insane, when in the "full tide of successful experiment," protecting and ministering to the shattered health of about three hundred patients, has been vacated—that is the word, strange and novel though it be in such a connection —vacated by the removal, *en masse*, of its invalid inmates, and that, too, at a time when the coffers of the State Treasury were overflowing with funds collected expressly for their support by the taxation of a people willing thus to contribute to the alleviation of the sufferings of their fellow-men.

"The Constitution of Indiana," say the Commissioners of the Hospital for the Insane in the State mentioned, "provides that the legislature shall provide for the support of her benevolent institutions, and that no money shall be drawn from the treasury but under appropriations made by law."

Owing to a political disagreement between the two branches of the legislature, the appropriation bill which passed one house, was lost in the other; and the General Assembly adjourned leaving the benevolent institutions without funds for the current expenses of the year.

In this dilemma, the Commissioners of the Hospital for the Insane, of the Asylum for the Blind, and of the Asylum for Deaf-mutes, twice petitioned the Governor of the State to call an extra session of the legislature, in the hope that the impending evil might thus be averted. Their petition was not granted. Being prohibited by statute law from borrowing money for the support of the institutions under their charge, but one resource was left to these commissioners. They must STOP. Accordingly, the patients of the establishment first-mentioned, and the pupils of the other two, were summarily discharged in April, 1857.

"The greater number of the patients discharged from the hospital," says the superintendent, Dr. Athon, "were placed in the poor-houses of the several counties; the remainder were confined in jails and out-houses—all disposed of without any reference to their treatment and cure, but merely for confinement and support."

It is no wonder, that "the return of so many insane persons, in so short a period, produced a profound sensation in every part of the State, filling the hearts of many with consternation and alarm." Nor is it surprising that, under such circumstances, "a few of the boards doing county business took up the subject and proposed to the officers of the hospital to return their patients and support them there at the expense of the counties" respectively.

The order for the evacuation of the hospital was issued upon the 3d of April. On the 27th of the same month the commissioners met and resolved that patients, either private or from the counties, might be received, provided they were sent in conformity with the law, and that they should pay all expenses incurred by the institution beyond that which it would cost to take care of the establishment without any patients. "This experiment was fairly and faithfully tried for five months, and in the most favourable part of the year, and, we may safely say, utterly failed to satisfy either the officers of the hospital or the public." The average number of patients during its operation was about thirty.

At length, in September, at "a council of State officers, it was resolved to furnish money from the State Treasury to open up and carry on all the State benevolent institutions;" and in pursuance of this resolution, on the 22d of the same month, the president, *pro tempore*, of the hospital issued a notice that from and after the fifth day of October next ensuing, it would be "opened for the reception of patients according to law."

We rejoice in the assurance which comes to us from Indiana, that the course

pursued by the legislature, or by a portion of its members, meets with no sympathy or commendation among the people of that State.

We quote the annual registration mostly in the language of the report—

	Men.	Women.	Total.
Patients in the hospital October 31, 1856 . .	114	121	235
Admitted in the course of the year . . .	82	78	160
Whole number	196	199	295
Discharged (of admissions during former years) officially, during the month of April . .			229
By death (of admissions during former years) .	3	3	6
Discharged (of admissions during the present year) officially, during the month of April . .			74
By death (of admissions during this year) . .	2	0	2
Discharged at the close of this year . . .	8	2	10
Whole number discharged during the year . .	167	157	321
Remaining in the hospital October 31, 1857 .	29	42	71
Of the patients discharged, there were cured .	29	20	49
Patients admitted from the opening of the hospital in 1849	625	615	1,240
Discharged recovered	326	317	643
Died			108

Causes of death this year.—"Maniacal exhaustion, chronic arachnitis, epilepsy, old age and debility, general paralysis, chronic diarrhœa, congestive pneumonia, œsophagitis," 1 each.

In reference to causes of mental disorder, Dr. Athon makes the following remarks:—

"The insatiable desire to accumulate property, which is the characteristic of the age, is the most fruitful source of insanity. The passion for gain is contagious, and although a majority of people are attacked by and survive the malady, not a few succumb to its mental ravages; and although the table of causes of insanity accompanying this report does not seem to bear us out in our opinion, yet we think there is indubitable evidence that the causes assigned for the insanity of patients are at least one-half incorrect, and ought to be put down '*over-desire to accumulate property.*' The table referred to is made up according to causes assigned by the friends or physicians of the patients, and not by us."

Since this report was written the number of patients has increased to two hundred and seventy-seven. P. E.

ART. XVII.—*Brief Expositions of Rational Medicine, to which is prefixed The Paradise of Doctors, a Fable.* By JACOB BIGELOW, M. D., late President of the Massachusetts Medical Society, Physician of the Massachusetts General Hospital, &c. Boston: Phillips, Sampson & Co., 1858. 12mo. pp. 70.

THIS is a small book, but it contains more than some medical books which are larger. It is well known that its author has been prominent among those who have thought that there was much overdosing in the profession, and that there was great need of a reform in this particular. The first proclamation of his sentiments was made in 1835, in his essay on Self-limited Diseases. By a large proportion of the profession he was regarded at that time as being unwarrantably sceptical in relation to the powers of medicine in curing disease; but there were many who agreed with him, and who were pushing their inquiries in the same direction. Indeed, we may say that many years before this, there were medical men here and there, who were led, by the discrepancies between the statements of those who advocated opposite modes of practice, to question whether the favourable results boasted of in these statements were not to be attributed more to nature's salutary efforts than to medicine. So far were many

led in the right path by this questioning, that the sentiments of Dr. Bigelow's essay were fully responded to by no small portion of the profession, and at the present time they are the sentiments of almost all truly intelligent medical men. It is true that some physicians of high respectability make objections to them; but it is only from a misapprehension of Dr. Bigelow's meaning. They suppose him to go much further than he really does, ascribing an ultraism to him that is not his due.

The main part of the book is prefaced by a fable, entitled the Paradise of Doctors, which was read at the last annual dinner of the Massachusetts Medical Society. The fable begins thus: "It happened, once, that a general awakening took place among the physicians, druggists, and citizens of the quiet old State of Massachusetts, during which it was discovered that a great and culpable neglect had long been prevalent throughout the community in regard to the important duty of taking physic. A conviction fell upon all that it was now imperatively necessary that every man, woman, and child, should proceed at once and habitually, in sickness and in health, to take three times as much medicine as they had taken before." The results of this great propensity to physic are very humorously set forth. Among other things it is said, "Clergymen and moralists forgot that men were sinful; it was quite enough that they were bilious. Bile was regarded as the innate and original sin, which was to be extirpated with fire and physic even from the newly-born child. Nobody was aware that bile is necessary to life; no two persons were agreed as to what the term *bilious* meant; it was something insidious, mysterious, and awful. Some held that it consisted in having too much bile; others in having too little. According to some, the bile was held back in the blood; according to others, it was absorbed ready formed into the blood. Fierce schisms and sects were generated on the question who, and whether any, were exempt from its contaminating presence. The bon vivant, after his night's carouse, furnished abundant demonstrations of its existence on the following morning. A healthy labourer, who had had the temerity to boast of his freedom from bilious taint or suspicion, was convicted and brought to his senses by the ordeal of a dozen grains of tartar emetic." The trade of physic was so lively, that doctors and druggists poured into the Bay State from other quarters, and the trade was overdone. This, together with the manifest effect upon the general health of the community, began to produce some doubt about the paramount duty of physic-taking. But "nevertheless," the fable goes on, "weak-minded men and strong-minded women failed not to harangue audiences in the streets on the astonishing powers of medicine. Spirit-rappers were summoned to evoke from their rest the heroic shades of Rush and Bouillaud, Sangrado, Morrison, and Brandreth. These distinguished worthies exhorted their followers not to shrink or falter under the trials to which they were subjected, but rather to redouble their perseverance, until the truth of the faith which they held should be established by the testimony of their martyrdom in its cause."

But at last there came an end to all this in this wise: "A meeting accidentally took place between two old shipmasters, one of whom had lost overboard his barrel of beef, and the other his medicine-chest, in a gale of wind at the commencement of their passage. On examination and comparison of their respective crews, the contrast was so marked between the ruddy faces of the latter, and the lantern-jaws of the former, that a general mutiny sprang up in both crews against the further tolerance of the physic-taking part of their duty. The contagious insurrection spread from Fort Hill to Copp's Hill; and on the following night several medicine-chests were thrown overboard by men in the disguise of South-sea Islanders." The result was that the people were aroused, and a mass meeting was called on Boston common. Many speeches were made, and very discrepant opinions were advanced. After a while "an old lady, whose shrill voice drew immediate attention, protested against violent measures of all kinds, and moved, as a middle course, that resort should be had to homœopathy. It never did any harm, and was very comforting, especially when well recommended by the physician. It cured her child of the measles in six weeks, and herself of a broken leg in six months, during which time she had two hundred and ninety-five visits, and took more than two hundred globules. She had walked to the

meeting on her crutches to exhibit to the assembly the astonishing powers of the Hahnemannic system. Here she was interrupted by a bluff marketer, who somewhat rudely pronounced homœopathy to be a great humbug, since, but a short time before, his child had eaten part of a raw pumpkin, and was seized with convulsions; and the physician who was sent for, instead of taking measures to dislodge the offending cause, took out a little book, and remarking to the bystanders that 'like cures like,' proceeded to prescribe the hundred millionth part of another pumpkin. The next person who rose was a manufacturer, who had calculated that the homœopathic profit on the cost of the raw material was altogether unreasonable. He had himself expended seventy-five dollars in a quarter of a grain of belladonna, so divided as to keep off scarlet fever; but found, after all, that he had not bought enough, for his children had the disease a little worse than any of their neighbours."

At last an old gentleman started the inquiry whether there was no such thing as rational medicine, and whether nothing could be made acceptable to the public but extremes of absurdity. And he went on to make a very sensible speech, which took well with the meeting. Resolutions were thereupon adopted "to the effect that it was unbecoming a free and enlightened people to be drug-ridden or globule-ridden, and recommending recourse to temperance, exercise, regularity, and rational medicine, whenever it happened that medical treatment was necessary."

The meeting dispersed, and its results were immediately seen. Drugs fell in price and provisions advanced. The doctors and druggists that came from other quarters left. "Faces assumed a more vigorous and healthy aspect, and the country once more resounded with the music of the axe and the hammer, and the cheerful rattling of knives and forks. Steam engines, which had been erected for the pulverization of drugs, were attached to saw-mills and spinning-jennies. Last of all, a noble and useful art, which had long been depressed under the effects of its own exaggeration, was enabled once more to raise its respectable head, and to regain the confidence of society, under the name of RATIONAL MEDICINE."

After this amusing Preface, which the author, in his dedication to Sir John Forbes, says is introduced because "the public ear is sometimes attracted by exaggeration to give its attention afterwards to more chastened expositions of the truth," he proceeds to the subject matter before him. After some brief remarks on the tendency to ultraism, which appears in practical medicine as well as on other subjects that are agitated in the community, he says: "The methods which, at the present day, are most prevalent in civilized countries, in the treatment of disease, may be denominated the following:—

"1. The *Artificial* method, which, when carried to excess, is commonly termed heroic, and which consists in reliance on artificial remedies, usually of an active character, in the expectation that they will of themselves remove diseases.

"2. The *Expectant* method. This consists simply in non-interference, leaving the chance of recovery to the powers of nature, uninfluenced by interpositions of art.

"3. The *Homœopathic* method. This is a counterfeit of the last, and consists in leaving the case to nature, while the patient is amused with nominal and nugatory remedies.

"4. The *Exclusive* method, which applies one remedy to all diseases, or to a majority of diseases. This head includes hydropathy, also the use of various mineral waters, electrical establishments, etc. Drugs newly introduced, and especially secret medicines, frequently boast this universality of application.

"5. The *Rational* method. This recognizes nature as the great agent in the cure of diseases, and employs art as an auxiliary, to be resorted to when useful or necessary, and avoided when prejudicial."

Our author comments briefly on each of these methods. The *artificial* method relies little upon nature and almost wholly upon art. When pushed to a high degree it is "heroic" practice, as it is termed. We think that Dr. Bigelow rather overestimates the present prevalence of this method. He commits in some measure the same error that Sir John Forbes did when he said, *things have arrived at such a pitch that they cannot be worse; they must mend or end.*

He says, for example, that "the present period appears to be more marked than preceding ones by the opposite methods of treatment pursued by medical men in the management of disease." We do not believe this to be true. We are at the present time in a transition period, immediately succeeding one which was marked by warm strife between the advocates of "opposite methods of treatment." This strife is now vastly diminished, *modes* of practice have begun to pass away, the propriety of rigid discrimination in therapeutics is extensively recognized, and the sentiments which Dr. Bigelow and others have promulgated are thoroughly leavening the medical public.

But although this decided advance has been made, there is still much of undiscriminating overdosing in the profession. As Dr. Bigelow remarks, "a considerable amount of violent practice is still maintained by routine physicians, who, without going deeply into the true nature or exigencies of the case before them, assume the general ground that nothing is dangerous but neglect. Edge-tools are brought into use as if they could never be anything more than harmless playthings. It is thought allowable to harass the patient with daily and opposite prescriptions; to try, to abandon, to re-enforce, or to reverse; to blow hot and cold on successive days; but never to let the patient alone, nor to intrust his case to the quiet guidance of nature. Consulting physicians frequently and painfully witness the gratuitous suffering, the continued nausea, the prostration of strength, the prevention of appetite, the stupefaction of the senses, and the wearisome days and nights, which would never have occurred had there been no such thing as officious medication."

We are glad to see that our author speaks out plainly in regard to "interested specialists, who inflict severe discipline and levy immense contributions on credulous persons." Those regular physicians, who in great numbers, both in city and in country, make a hobby of either swabbing the throat or cauterizing the os uteri, do effectual service in opposing the progress of rational medicine, and in upholding the dominion of quackery. It would be well for the interests of medical science and of humanity if they should leave the profession, and consort with the quacks where they rightly belong.

In remarking upon the *expectant* mode, Dr. Bigelow says: "I sincerely believe that the unbiased opinion of most medical men of sound judgment and long experience is made up, that the amount of death and disaster in the world would be less, if all disease were left to itself, than it now is under the multiform, reckless, and contradictory modes of practice, good and bad, with which practitioners of adverse denominations carry on their differences at the expense of their patients." If he mean that it would be better on the whole to leave disease to nature than to subject it to medicine as it is *now* administered by the profession at large, we dissent. But we do not believe that this was true of medicine in the first quarter of this century when the "heroic" practice was everywhere in high favour. Then the profession *as a whole*, we have no doubt, did more harm than good; and we think it was good advice which was given then by a physician to a gentleman who was about to travel extensively, and who asked him what he had better do if taken sick in a place where he knew nothing of the character of the physicians, viz., that he had better keep still, diet, and leave himself to nature, rather than hazard the committal of his case to a stranger.

Dr. Bigelow's remarks on the *rational* method are exceedingly interesting, but they are not sufficiently extended. He deals too much in generals. If he had descended more to particulars, and given us a little in detail the results of his experience as to the limits of the power of medicine in the treatment of disease, he would have done a greater service to the profession than he has now done. As it is, the suggestions which he has made, followed out strictly by a multitude of practitioners, with full records of their individual experience, would largely sift the supposed therapeutical acquisitions of the profession, and at the same time add greatly to the real resources of our art. On this sifting of our therapeutics Dr. Bigelow thus justly remarks: "It is the part of rational medicine to require evidence for what it admits and believes. The cumbrous fabric now called therapeutic science is, in a great measure, built up on the imperfect testimony of credulous, hasty, prejudiced, or incompetent witnesses, such as have afforded authorities for books like Murray's Apparatus Medicaminum, and Hah-

nemann's Organon. The enormous polypharmacy of modern times is an excrescence on science, unsupported by any evidence of necessity or fitness, and of which the more complicated formulas are so arbitrary and useless, that, if by any chance they should be forgotten, not one in a hundred of them would ever be re-invented. And as to the chronicles of cure of diseases that are not yet known to be curable, they are written, not in the pages of philosophic observers, but in the tomes of compilers, the aspirations of journalists, and the columns of advertisers."

There is one very important point which is left in the dark in Dr. Bigelow's book, simply because he is so brief. We refer to the relation of what is ordinarily reckoned as palliative treatment, and so called by Dr. Bigelow, to the cure of disease. He states the objects of medical practice to be, "1. The cure of certain diseases. 2. The relief or palliation of all diseases. 3. The safe conduct of the sick." Now palliation or relief in the large majority of cases in which recovery takes place, has more to do with the recovery than any of those means which are considered as positively curative. Indeed in many the recovery is dependent upon palliation and relief, it being in such cases absolutely necessary to the successful issue of nature's efforts to relieve the suffering and quiet the disturbance of disease. In every such case the physician as really cures the disease as when he applies medicines that are positively and directly curative.

Our author believes that medical practice ought, so far as it can be, to be laid open to the public, instead of being wrapped in more mystery than belongs to it, and asserting claims which are entirely unwarrantable. On this point he thus remarks: "It is the part of rational medicine to enlighten the public and the profession in regard to the true powers of the healing art. The community require to be undeceived and re-educated, so far as to know what is true and trustworthy from what is gratuitous, unfounded, and fallacious. And the profession themselves will proceed with confidence, self-approval and success, in proportion as they shall have informed mankind on these important subjects. The exaggerated impressions now prevalent in the world, in regard to the powers of medicine, serve only to keep the profession and the public in a false position, to encourage imposture, to augment the number of candidates struggling for employment, to burden and disappoint the community already overtaxed, to lower the standard of professional character, and raise empirics to the level of honest and enlightened physicians." W. H.

ART. XVIII.—*Practical Dissections.* By RICHARD M. HODGES, M. D. Demonstrator of Anatomy in the Medical Department of Harvard University. 1 vol. 12mo., pp. 254. John Bartlett: Cambridge, 1858.

WE have presented to us in this little book, a new American dissector's guide. It comes in a style somewhat out of the ordinary way, being printed on tinted paper and bound in marbled covers, giving it rather a "holiday aspect." These peculiarities, at first sight attractive, are, we think, of positive disadvantage, since being intended for use in the dissecting-room, its covers should be made of the least absorbent and perishable materials; and further, as during the winter the greatest number of dissections are invariably made at night, the want of contrast between the ink and the tinted paper, makes the perusal rather painful than pleasant; besides which the book soils just as readily as if the pages were white.

The *practical directions* are set up in entirely too small type.

So much for the general appearance of the work, which we presume is chargeable to the taste of the publisher.

In regard to its intrinsic merits, we are sorry to say that we do not find as much to commend as we should like. Our author in his preface quotes, thus "the smallness of the size of a book is always its own recommendation, as on the

contrary the largeness of a book is its own disadvantage as well as the terror of learning." And he certainly has been fully impressed with the correctness of this very erroneous idea. We, on the contrary, maintain that no book is too large which properly investigates the subject upon which it treats, and every book is too small which gives crude and imperfect notions of what it proposes to teach. "Μεγα βιβλιον μεγα κακον" is a proverb which in the majority of instances is better forgotten than remembered. Indeed the prevalent desire at the present time seems to be, to see not *how much* but *how little* of anatomy may be learned by a student of medicine to insure his degree; these *little* books are the very things for such cases. We certainly agree with the author that minute anatomy and some other matters are out of place in a "dissector," but we want full and lucid descriptions of all that is left after this pruning out.

We are told that "illustrations have been omitted, for the reason that they add to the expense of a book, often without enhancing its real value, and from a belief that they are liable to great abuse, by distracting attention from the descriptive text to the numbered references, the simple verification of the latter taking the place of the full information only to be obtained from the former." We had supposed that the time had gone by, when any individual would attempt to excuse himself for the neglect of a most valuable method of teaching upon such untenable grounds as these. Pictorial illustrations are of such acknowledged value that the student would willingly pay for their use, rather than be deprived of them; and as to their "great abuse by distracting attention from the descriptive text," our author might on the same basis recommend the student to eschew dissections lest when he turns to his subject, the original of the pictures, his attention should be distracted from the full information of the said text. It is well known that few descriptions, even those emanating from the most practical minds, are adequate to convey a distinct impression of the object under consideration, and that pictures may therefore be made a means of correcting ideas and assisting the student to recognize the part in his subject. The use of a practical anatomy constructed without illustrations, will invariably double the labour of the demonstrator, who is then constantly called upon to recognize for his student, the nerve, vessel or muscle sought, when a simple glance at a wood-cut would "verify" the description; and this remark will be fully supported by the experience of any one who has had the charge of large classes. The decided advantage which illustrations would be to this book, will be shown by a reference to the description of the muscles of the pinna, on p. 3.

"The *major helicis* is to be found on the anterior border of the helix, just above the tragus.

"The *minor helicis* is placed upon that part of the rim of the ear which extends into the concha," etc. etc.

Now, if these descriptions give the slightest idea of the shape or direction of the muscles in question, we have failed to gain it. To be sure these muscles are not of any particular importance to the student, but if it was worth while to put them in large type, it was worth while to illustrate such imperfect text in a manner to render it clear.

The body of the book is opened by "A few general rules to be observed in dissecting," thus: The use of the belly of the knife in exposing muscles, the point in exposing arteries, the necessity of good forceps, etc., are briefly referred to, and then the "Maxims for the dissecting-room" are summed up thus:—

"1. Cover the part with damp cloths after dissecting. Drying is worse than decomposing.

"2. Put all the fragments on a piece of paper, which, with all fluids, are to be removed as they accumulate.

3. "Make everything tense, if possible, before dissection, and complete the dissection of one thing thoroughly, before another is commenced.

"4. Never leave a muscle until you come to bone at both ends—if there is bone.

"5. Let the eye go before the hand, and the mind go before the eye.

"6. Know what the books say, and cross-examine them in presence of the subject."

We cannot say that we consider these maxims as either elegant or correct.

In regard to the second maxim we should simply remark that in most well-

regulated dissecting-rooms, tin dishes and sponges are furnished, which are more appropriate than pieces of paper.

Concerning the impropriety of the latter part of the third, and the fourth maxims, as general rules, many of the subsequent pages amply testify. It is frequently impossible to "complete the dissection of one thing thoroughly before another is commenced;" and the direction, "never leave a muscle till you come to bone at both ends—if there is bone," is equally erroneous in practice. Thus, see p. 90: "The insertion of the biceps and brachialis anticus cannot be examined till a subsequent stage of the dissection." Neither can the long head of the biceps be properly examined until the shoulder-joint is opened for its study. On p. 125: "The insertion" of the flexor carpi radialis "cannot be seen till the hand is dissected." On p. 126, in speaking of the flexor sublimis digitorum: "inferiorly it divides into four tendons which pass beneath the annular ligament, to be inserted into the base of the second phalanges of the fingers, as will be seen in the dissection of the hand." In short, any one can call to mind many instances, both of muscles, arteries, and nerves, the dissection of which cannot be completed before they are left, since they extend through various regions, all of which cannot be opened at the same time.

There are some errors in the book which we are inclined to regard as typographical, although they are of such a glaring character that they should not have occurred. Thus on p. 7 we have: "Beneath this muscle," speaking of the levator labii superioris proprius, "will be found the branches of the *infra-orbital* nerve; being the terminal filaments of the superior maxillary branch of the THIRD pair of cranial nerves." This, however, is put correctly on p. 22. On p. 9: "Beneath the depressor anguli oris will be found issuing from the mental foramen, the termination of the *inferior dental* branch of the SUPERIOR maxillary trunk of the THIRD pair of cranial nerves." On p. 11 this is in a casual way stated correctly.

There is also to be noticed the improper spelling of certain words, which we hold to be of importance. We refer, *firstly*, to the name of a part of the innominate bone, viz., *pubes*. In using this term our author seems to vacillate somewhat between pubis and pubes, but on the whole, we think he rather favours pubis, as this is his most frequent spelling. Thus on p. 148 he speaks of the "spine of the pubis;" on p. 149 of the "crest of the pubis;" and on p. 230, says, "attached to the bones of the pubis," whilst on p. 211 he speaks of "the ramus of the pubes and ischium." Without doubt *pubes* is the proper word to employ, either in the singular or plural, and the bone is either "the pubes," or the "os pubis," or the "pubic bone."

Secondly. Hilus is improperly used for *hilum*. There is no such word as hilus, although it has been used pretty freely in the descriptions which our author gives of the spleen, liver, and kidneys. We must, however, give him credit for the use of the word *calvaria*, which is often very improperly written *calvarium*.

The practical directions, though short, are, in general, good; some, however, are, we think, open to criticism; thus on p. 3, we are told: "To obtain a perfect idea of the external auditory canal, a plaster or wax cast of it should be made; the canal being previously cleared of all accumulated cerumen, and oiled with a feather, the cast when hardened will be easily extracted." Experiment does not seem to verify this statement, which we were inclined to doubt in the first place, from the anatomical construction of the parts, which is very imperfectly referred to on p. 79, where the author, speaking of the osseous portion, says "its lower wall describes a curve, the convexity of which is directed upwards;" and, in fact, all anatomists agree that the meatus is most contracted in the middle, whilst Sharpey and Quain tell us that "the outer opening is larger in the vertical diameter, but the tympanic end of the tube is slightly oval in the opposite direction." We however had the experiment tried in some five or six cases; the plaster in every instance, even though set in some for twenty-four hours, broke without coming away, and the wax could only be removed while yet warm, so that, yielding to compression, it could not give "a perfect idea of the external auditory canal."

We are told on p. 6, when speaking of the lachrymal gland, that "its excretory ducts cannot be demonstrated." This can often be done, as pointed out by Cru-

veilhier, by rubbing a solution of carmine, or slightly diluted ink, in the superior palpebral sinus, when the orifices will fill with the colour.

In the directions on p. 13, for the removal of the calvaria, we are told "it may be done more neatly with a saw guided in the proper direction by a string tied round the head." This is almost equal to making an ink-mark over a vein as a guide in bleeding. It is useless as a guide, since, if the saw leaps from the forming groove, the string will certainly be cut; we fancy that the operator had better "let the eye go before the hand, and the mind go before the eye," when he will perform a much more successful section. We are also told that "the saw is to be carried through the outer table of the bone only, and the inner one fractured by a chisel and mallet; this saves the membranes of the brain from being wounded." Yes, this result would certainly follow *if* it were possible to saw through the outer table *only;* but we do not suppose, knowing the varying thickness of the several bones, that this feat is likely to be performed more than once in a very long series of attempts. We have rarely seen it successful, either in our own or other hands, and Cruveilhier, who has had *some* experience, says, "but it is almost impossible to avoid cutting the brain with the saw." The dura mater, and even the brain, will accordingly very often be found cut, especially in the regions of the temporal fossæ, after such a section.

In speaking of brains on p. 64, he says: "The autopsy-room is the only place where they can be obtained fresh enough for dissection, and the firmness of their tissue may be improved by several days' immersion in alcohol." It would seem, therefore, that our author has no experience with the solution of chloride of zinc as a preservative, with which nearly all subjects are now injected previously to the use of plaster or other material. In these cases, the brain is almost invariably so firm that in recent subjects the cranium need not be opened until every other part is dissected, and even after "material" has been kept for many months, the brain is not unfrequently in excellent order for examination, its colour only, in either instance, being destroyed.

The anatomical descriptions are singularly loose in many instances.

In referring to the borders of the falx cerebri on p. 14, he says: "the inferior, which is concave and free, is in contact with the corpus callosum of the brain;" now this *contact* occurs *only* at the back part, so that, in the front part of the median fissure, the hemispheres covered by pia mater are actually in contact; we have frequently seen a very considerable space between the greater part of the inferior margin of the falx and the corpus callosum, the visceral arachnoid, as usual, passing from one hemisphere to the other, not being far beneath the margin.

On p. 167: "If the peritoneum be peeled off from the intestine, the *muscular coat*, consisting of pale, transverse fibres, will be seen beneath it; in the large intestine these are chiefly collected in the longitudinal bands characteristic of that part of the tube." We, however, think it probable that, unless the external longitudinal layer of fibres of the small intestine is peeled off with the peritoneum, these will be seen overlying the circular fibres; but we do not think it probable that the *transverse* fibres will be seen gathered into the longitudinal bands of the large, as the text certainly reads.

On p. 202, we are gravely informed that "The orifice of the vagina is transversely elliptical; in the virgin it is sometimes partly closed by a circular fold of mucous membrane, called the *hymen;* after childbirth, this is destroyed," etc. etc. Comment upon this paragraph is perhaps unnecessary. A vaginal orifice, *transversely elliptical*, would be curious to look upon, and the history of a hymen destroyed *after* childbirth, would certainly border on the marvellous. That this destruction, when delayed, must occur *during* childbirth, there seems to be but little doubt; and that it is accomplished, in most instances, at a period considerably anterior to this event, seems to be the general experience of observers. Accordingly, this destruction will be found to have taken place, *usually*, at the time of the first successful sexual connection.

The anatomy of the perineum, p. 184, is particularly unsatisfactory; so is the description of the nasal fossæ. In fact, our new practical guide resolves itself into nothing but an imperfect anatomical remembrancer.

We must, however, commend the division of the book into dissections of the

proper length, which is well done, and would form a most useful basis for a larger and more complete work. Economy of "material" and systematic labour are certainly the results of this proceeding.

In concluding this notice, we take pleasure in saying that we have observed on several pages indications that Dr. Hodges is not by any means unacquainted with his subject, and has alluded to the more recent investigations in descriptive anatomy. But we have always held that, if correctness of language and spelling, and clearness of description, are ever necessary to a medical man, it is during his pupilage, when impressions are received that are almost ineffaceable, even though they may be learned to be wrong years afterwards; hence our critical examination of this preliminary work.

The A B C's of the profession should be clear and distinct if it is to be properly respected. W. H. G.

ART. XIX.—*Guy's Hospital Reports.* Edited by SAMUEL WILKS, M. D., and ALFRED POLAND. Third Series, Vol. IV. London, 1858. 8vo. pp. 371.

THE present volume of this always welcome publication contains twelve original communications, eight wood-cuts, and fourteen lithographic plates. The following is an analysis of its contents:—

I. *Case of Epithelial Cancer of the Œsophagus, in which Gastrotomy was performed.* By S. O. HABERSHON, M. D.

II. *Description of the Operation of Gastrotomy.* By J. C. FORSTER.

These two articles, as they relate to the same case, for the sake of simplicity and brevity, will be considered conjointly. They present the detailed history of the symptoms observed in a patient affected with epithelial cancer, which, from its position, interfered both with deglutition and respiration, and of an operation performed for the purpose of establishing an artificial opening through which food might be introduced directly into the stomach.

It is well to state here that when they submitted their patient to the operation, neither Dr. Habershon nor Mr. Forster was aware that it ever had been practised before. Some of our readers must have remarked in Dr. Habershon's recently published treatise on diseases of the alimentary canal,[1] that the propriety of forming a gastric fistula in cases of organic stricture of the œsophagus is therein argued in a manner that shows the author not to have been aware that an operation for the formation of one had ever been performed. From its extreme rarity, we will give the whole history of this case, as briefly as possible, and using, so far as we can, the words of the original communications.

A man, 47 years of age, of ordinary stature, entered the hospital in the beginning of October, 1857, under Dr. Habershon's care, labouring under considerable dyspnœa. Examination showed the pulse compressible, but regular; the heart's sounds normal; the respiratory murmur indistinct, with some sibilant râle. After a short time he began to complain of severe pain in the throat during coughing, and in a few weeks pain was also produced in swallowing, especially when solids were taken. In December deglutition had become very difficult, so that liquids only could be taken. In February, on examining the throat, Mr. Forster detected, for the first time, a rounded tumour, situated below the epiglottis, towards the right side, and evidently obstructing the commencement of the œsophagus. In March the voice had become more feeble, and deglutition had become so difficult that nutrient injections were had recourse to. The respiration had now become so difficult that, on the second of March, tracheotomy was performed, the incision being made as low down as possible. The operation, however, did not afford any relief: the trachea appeared flattened from behind, and the patient could not bear the tracheal tube inserted; when it was attempted, he appeared to be quite

[1] Pathological and Practical Observations on Diseases of the Alimentary Canal, Œsophagus, Stomach, Cæcum, and Intestines. London, 1858. P. 28.

incapable of breathing. On the 25th of March the patient appeared to be sinking, and the rectum ejected the enemata almost at once. Under these circumstances, the question presented itself, whether life was to be allowed gradually to die out, or whether an attempt was to be made, by any other means, for the introduction of food. Dr. Habershon thus discusses this question:—

"Three modes of relief suggested themselves: 1st, the forcible introduction of an œsophageal tube; 2d, opening the œsophagus in the neck; and 3d, opening the stomach. In reference to the first, there was evidence of a growth at the commencement of the œsophagus; and the trachea appeared partially compressed, as shown in the operation of tracheotomy. The disease in the throat was probably of the form of epithelial cancer, and the passage of a bougie must have been constantly repeated. The great irritation and coughing produced by attempting to swallow showed that the epiglottis was extensively ulcerated; *or* that there was a connection between the œsophagus and trachea, which would render the passage of a bougie very dangerous. In some cases of cancer of the œsophagus, a bougie has been passed into the pleura, and led to speedy death; and probably the passage of a bougie could not have been effected; this decided against the first proceeding. As to the second—opening the œsophagus—the most frequent seat of cancer in that tube being opposite to the root of the lung, about the third dorsal vertebra, and consequently beneath the position at which the canal could be opened, would have made the operation a very formidable, dangerous, and useless one. In reference to the third—opening the stomach—this alone appeared to be the operation which could possibly relieve the patient. Wounds of the stomach, as that of Alexis St. Martin, the cases recorded by Mr. South, those by Dr. Murchison, &c., showed that life could be continued after fistulous communication had been thus made. The operations on the lower animals proved that it could be performed with some probability of success; such an operation would give a chance of prolonged life where death was certain; and where the peritoneum was healthy, there was less danger than in abnormal conditions of that membrane. If life were prolonged only for a short time, and food introduced, there would be relief to the distressing thirst and the fearful sense of starvation: and lastly, it was evident that the patient was dying from inanition rather than from disease, nutrient enemata being refused. On the other hand, however, I felt that the disease was probably of a cancerous character, and would sooner or later terminate life; that the operation was a hazardous and uncertain one; and that life might possibly be continued for a few days by a small portion of the injection being retained."

After carefully weighing all these facts, and calling in the assistance of Mr. Forster, opening the stomach was decided upon. The operation is minutely described in the second communication. An incision was made through the abdominal parietes in the course of the left linea semilunaris, commencing between the eighth and ninth ribs, and carried downwards to the extent of three and a half inches. The peritoneum was divided the whole length of the wound, upon a director, and the stomach thus exposed; it was then hooked up, with a tenaculum, to the abdominal parietes, and sewed thereto by an uninterrupted suture, with a strong silk ligature. After the first two stitches had been put in, the organ was opened by dividing what was included between the two portions of the tenaculum; the opening thus made was about three-quarters of an inch in length, and was afterwards slightly enlarged. In making the stitches, the needle was passed one-third of an inch within the stomach, so as to get a good hold, and as much as possible of the abdominal walls were included. As the opening in the stomach was much less than the external wound, the remaining part of this was brought together with an uninterrupted suture, the divided peritoneum being left untouched. An elastic tube was at once introduced into the opening, and milk with egg was injected through it into the stomach. In this way, in the course of twenty-four hours, six eggs, beaten up in twelve ounces of milk, were given in small, divided doses, with four ounces of rum, the quantity introduced each time being two ounces. The patient, however, began to sink, and, notwithstanding the free use of stimulants, he died about forty-four hours after the operation. Dr. Habershon expresses his belief that if the operation had not been performed, death might have taken place as speedily, if not more so, and that it relieved the

thirst and sense of starvation, and rendered the patient more comfortable. "Under these circumstances," he says, at the close of his communication, "it is urged that, if a favourable case be presented, the same operation be performed, but without waiting till life is almost extinct."

At the *autopsy* of the patient, the epiglottis was found healthy; at the posterior surface of the cricoid cartilage there was a growth connected with the mucous membrane, about a quarter of an inch in elevation, and extending from side to side, soft and slightly injected; passing downwards, there was irregular ulceration, and towards the trachea destruction of all the coats of the œsophagus; an opening one-sixteenth of an inch in diameter existed between it and the trachea; below the ulceration the canal was so much contracted, by infiltration into the surface of the mucous membrane, that a probe could only be passed after death; *this constriction was situated at the level of the first bone of the sternum;* the rest of the œsophagus was healthy. One or two glands in the neck were infiltrated and diseased. In the upper part of the right lung there were numerous lobules of iron-gray consolidation, and in the lower lobe there were numerous gray tubercles. The lower lobe of the left lung was much congested, and one or two lobules were softened and breaking down, from acute changes, probably a very short time before death. There was no evidence, the report says, of any cancerous disease affecting any part except the œsophagus and one or two adjoining glands. It is to be regretted that no microscopical examination was made of those tissues said to have been affected with cancerous disease; or, if any was made, that no mention is made of it. In a case resembling in very many respects the one under notice, and which we witnessed ourselves, and have reported (see *Clinical Lectures on Surgery*, by M. Nélaton, p. 50), the stricture was owing to a large mass of tubercular matter that had been deposited between the trachea and œsophagus, and had undergone the usual changes witnessed in such deposits. In connection with this subject, it may be interesting to mention that, some years ago, in making some dissections for the purpose of discovering why strictures of the œsophagus should always be situated near the upper part of the sternum, we invariably found a number of lymphatic glands lying between the œsophagus and the trachea, just in that region.

An operation similar to the one above described has been performed twice before; in both instances by M. Sédillot, of Strasbourg. Mr. Forster refers to them very briefly at the end of his communication: he was not acquainted with them at the time of performing the operation himself. M. Sédillot calls the operation *gastrostomy* (*stomach-mouth*). The first time he practised it, which was in 1849, he made a crucial incision, about an inch and a half in diameter, over the rectus muscle, two inches and a half below and to the left of the xiphoid appendix. Dividing the rectus muscle and the peritoneum, and holding back the four flaps by the aid of the superficial and upper layers of the epiploon, he drew out a portion of the great curvature of the stomach, and making a puncture into it, he introduced a double canula, each tube having a projecting edge bent at a right angle, in order to keep the stomach against the walls of the abdomen, and also to retain the instrument at the external wound. Almost immediately, however, the stomach was drawn forcibly backwards; the canula followed, and was dragged into the abdomen; the patient died in twenty-one hours. The second time he performed the operation, which was in 1853, he modified his first proceeding; the incision was made extending from a spot two finger-breadths from the median line to less than an inch from the edge of the false ribs on the left side. After opening the peritoneum, the stomach was drawn up and fastened to the abdominal walls by the aid of sutures, passed through the skin and the peritoneal and muscular coats of the stomach, the opening of which was delayed until adherences should have formed between it and the abdominal walls. Two hours afterwards, during a violent attack of cough, the stomach was dragged into the abdomen. The threads of the sutures were removed, and a portion of the stomach, pulled out, was inclosed in the forceps of Assalini, with the hope of obtaining adherences, and afterwards an opening, from the mortification of the part inclosed by the forceps. By the fifth day solid adhesions were established, the gangrene was complete, and the mortified part was cut off by the scissors. Nutritive injections

were then thrown in through the fistula, but at the expiration of ten days the patient died of peritonitis.

In performing this operation of gastrostomy, the plan of waiting to open the stomach until adhesions have been formed between it and the walls of the abdomen, is certainly advisable. The mistake made by M. Sédillot was in not including the whole thickness of the wall of the stomach in his sutures. It seems to us, however, that it is an operation that should never be performed in cases such as that related by Mr. Habershon, where the stricture of the œsophagus is owing to organic degeneration, and when the general condition of the patient is so miserable. It could only be authorized when the stricture is caused by cicatrices, the effect of the action of hot liquids or of chemical agents, and the patient has no other concomitant affection.

These communications are accompanied by four plates, showing the position and extent of the external incision, the position of the stomach, the interior of the stomach at the opening, and the growth in the œsophagus.

III. *Pathological Observations.* By Samuel Wilks, M. D.

These are, as we learn from a few preceding remarks, the first of a series of pathological observations on subjects of interest, which the author has made by carefully reviewing the reports of nearly 2000 post-mortem examinations. The remainder of the series, from want of space, has been left to a future occasion for publication. The first chapter is upon Cancer and New Growths.

The last number of *Guy's Hospital Reports*—a notice of which was given in the April number of this journal, for the past year—contained a valuable communication from Dr. Wilks on the specimens of diseases of bone, contained in the Hospital Museum, with reference chiefly to the question of malignancy. We have been considerably disappointed at finding the present communication not to be one of the same kind. In his former communication Dr. Wilks confined himself, almost entirely, to stating facts, and then adding the deductions he would himself be disposed to draw from these facts. In this one, on the contrary, he indulges freely in fanciful speculations on great pathological questions, here and there adding thereto a fact that suits the particular hypothesis at the moment in favour.

Dr. Wilks believes that in every new growth the question to be asked is not so much whether it is malignant or not, as what is its degree of malignancy. In every case of adventitious growth or deposit in the body, two causes are in operation, one local, the other constitutional. The first cause alone in operation has a tendency, in his opinion, to the formation of a tissue allied to the healthy structures, whilst the latter has simply a power for the production of the simplest elements, as seen in malignant growths; when combined together we have, as one or the other cause predominates, all the intermediate varieties between extremely benignant and extremely malignant. To discover how much one cause is in operation and how much the other, Dr. Wilks believes to be the clue to the whole question of new growths. When, for instance, the local cause does not act from any reason, when plasma is thrown out, "the tendency is to the production of cells such as existed in the embryo preceding the formation of the tissue, and, therefore, if such embryonic cells spring up and continue to grow in the perfected body, we have a cancer; a cancerous tumour being simply a mass of embryonic cells." "A woman of middle age receives a blow on the breast, a slow growth springs up, composed of nucleated cells—this is cancer. Let the same local cause be in operation in a young woman of comparatively healthy constitution, when the procreative powers are in full force, and then the blastema or crude formative material supplied by the blood is disposed to assimilate itself to the natural structure, and the growth resembles, though imperfectly, the original gland; we have thus a mammary tumour or adenocele."

The views of Dr. Wilks on the subject of new growths are to a considerable extent novel, and, at all events, quite ingenious. If they should prove to be correct, however, it would be to us another example of the fact that *le vrai n'est pas toujours le vraisemblable.*

The second article is on the subject of Acute and Chronic Diseases. As the result of his observations, Dr. Wilks believes, that disease of the various parts

of the body is, as a rule, chronic, and that the acute affections are merely terminations of these, or are set up by them. This article is very short, only occupying four pages, and the subject is not illustrated by examples.

The third article is on the Relative Importance of Disease of the Aortic and Mitral Valves of the Heart. The different opinions respecting the relative severity and importance of these two lesions are explained by Dr. Wilks as owing to the facts that the existence of the aortic lesions is dated from the commencement of symptoms connected with them, and of mitral disease from an inflammatory attack which may have occurred many years before, and that the duration of the severe symptoms is much greater in disease of the aortic valves than in disease of the mitral.

The fourth article is upon Contre-coup. As the result of his observations, Dr. Wilks states, that fracture by contre-coup never occurs, and as to trephining the cranium on the side opposite to the one upon which the blow was received for the purpose of affording an issue to effused blood, he declares that he has never met with a case on the *post-mortem* table where an operation on the side opposite to that injured could possibly have given any relief.

The fifth article is on the subject of Chronic Rheumatic Arthritis, the disease so fully and ably treated of in the recent publication of Dr. Adams (*A Treatise on Rheumatic Gout, or Chronic Rheumatic Arthritis of all the Joints*, by Robert Adams, M. D., Surgeon to the Richmond Hospital, London, 1857). The museum of Guy's Hospital contains thirty specimens of the disease as it affects the hip-joint, nine of the disease of the shoulder, five of the elbow, but scarcely any of the other joints, together with four or five doubtful specimens of the disease of the vertebra and the pelvic articulations. As the connection of the disease with rheumatism is not established, Dr. Wilks would much prefer to call it simply chronic arthritis, "for the relation between it and acute disease of the joints is the same as between all other acute and chronic disease."

IV. *On the Operation of Opening the Urethra in the Perineum.* By THOMAS BRYANT.

With the laudable design of giving some new information for the settlement of this much vexed question, of opening the urethra in the perineum, Mr. Bryant has taken up the subject in order to illustrate it by the cases that have occurred at Guy's Hospital. These cases are eighteen in number, and the conclusions he draws from them are as follows:—

"1. In uncomplicated retention of urine from organic stricture the operation of opening the urethra in the perineum is not required, the more simple and safe one of puncturing the bladder through the rectum being preferable.

2. When complicated with extravasation of urine from any cause, it should be performed at once, and the stricture, when present, divided, if possible.

3. In laceration of the urethra from injury, when a catheter cannot be passed, the urethra should be opened.

4. And also when the above injury is associated with pelvic mischief.

5. Strictures are occasionally met with which are impermeable, and urethras which are obliterated.

6. That in cases of organic stricture, where the passage of a catheter is possible and not difficult; when it does not produce either any injurious or painful constitutional or local disturbance, and when, after dilatation of the stricture, an occasional passage only of the instrument is required to maintain an open channel, no other surgical means can be called for.

7. That cases of stricture do occur occasionally which are so exquisitely sensitive, and in which the passage of a catheter, however skilfully performed, is followed by such severe constitutional and local disturbance, as to produce more harm than good; and *others* which are relieved by means of a catheter, and are even fully dilated, but which have a tendency to contract again immediately upon the omission of the treatment; in such cases the operation of 'external division' (this is, with a staff in the urethra) is most valuable.

8. That the majority of cases of what are called impermeable strictures may be rendered permeable by constitutional treatment, but that some are undoubtedly impermeable; in such cases, the operation of 'perineal section' (this is, opening the perineum without having a staff in the urethra) is of value.

9. When the urethra is obliterated, the operation of 'perineal section' may occasionally be demanded, particularly when associated with perineal fistula.

10. That the worst and most intractable forms of stricture are the result of injury, and in these cases the operation either of 'external division' or 'perineal section' is of great value.

11. That in boys the operation is not so successful as in adults, although no better can be suggested."

V. *On Ophthalmostasis, with an account of an Improved Method in Extraction of the Cataract.* By JOHN F. FRANCE.

In this communication, after giving an account of many of the modes used for fixing the eye, Mr. France advocates the use of artery forceps. He applies their extremity with rather firm pressure a little beneath the inferior margin of the cornea, and clasps securely a somewhat broad portion of conjunctiva and of the submucous fascia. For the *idea* of using the artery forceps, he acknowledges his indebtedness to Desmarres, who mentions their use, but prefers other instruments.

Two plates accompany this paper, showing the instruments referred to therein. It is worthy of remark that no mention is made of the ophthalmostat which acts by the pressure its plate exerts in the oculo-palpebral cul-de-sac at the external angle of the eye, thus fastening the conjunctiva against the bone and making it impossible for the eye to turn inward.

VI. *On the Existence of Copper in Organic Tissues.* By WILLIAM ODLING, M. B., F. C. S., and AUGUST DUPRÉ, PH. D.

This communication, in a medico-legal point of view, is one of very great interest. While some very distinguished toxicological and physicological chemists affirm that whenever copper occurs in animal or vegetable tissues or fluids, its presence is to be regarded as exceptional, or abnormal, or accidental, others equally eminent maintain that copper is a natural and constant constituent of living organisms. From the experiments made by the authors of this paper, we think it must be positively concluded that copper does very frequently occur in certain vegetable and animal tissues, particularly in those of the kidney and liver, and that in the last named organ especially it sometimes presents itself in very considerable quantity.

VII. *A Collection of several Cases of Contusions of the Abdomen, accompanied with Injury to the Stomach and Intestines.* By ALFRED POLAND.

From a variety of sources Mr. Poland has collected as many as sixty-four cases in which different portions of the alimentary canal were injured by contusion. They are all arranged in order, as the injury affected the stomach, the duodenum the jejunum, the ileum, the cæcum, and the colon, and the most important points in each case are briefly related.

In three of the cases, the ruptured bowel occurred in persons the subject of hernia, but independent of any hernial mischief. A case of this kind would demand the utmost attention and circumspection, not only as to the question of diagnosis, but as to the treatment to be adopted. In one of those related by Mr. Poland, a woman, afflicted with a femoral hernia, was struck by her husband on the abdomen, and she died in twelve hours. Before her death, however, a surgeon reduced the hernia. At the autopsy the small intestine three feet from the stomach, and exactly opposite the seat of the blow, was found nearly torn across. The husband was accused of having caused her death, and the defence set up was—1st. That the rupture occurred in the hernial sac, and that the rent in the bowel was caused by the efforts of the surgeon in reducing the hernia; and 2d. Supposing this not to have been the case, that the rupture was spontaneous and accidental from the giving way of a diseased bowel. The arguments against these theories were considered conclusive, and they have thus been summed up:—

1. The pain came on immediately after the blow, and before the reduction of the hernia.
2. The ruptured bowel was at a considerable distance from the sac.
3. No inflammation or fecal matter in the sac.
4. Distinct external mark opposite to where the ruptured intestine lay.

5. No appearance of ulceration of the mucous membrane.

The husband was therefore found guilty of the death of the woman.

Another class of cases are those in which there is contusion of the intestine while in the hernial sac. Four cases of this kind have been reported in a former number of *Guy's Hospital Reports*, by Mr. Aston Key, and to these Mr. Poland has added eleven more. Of the whole fifteen cases thus assembled, in thirteen the gut was ruptured by the injury, and all died; in two the bowel was bruised and sloughed, and recovery took place. These two cases of recovery show the importance of laying open a hernial sac, after a blow thereon, whether there be intestine down or not, provided there be severe local or constitutional symptoms. In no case of the kind should reduction ever be attempted.

In drawing attention to this class of injuries Mr. Poland states that he "was mainly influenced by the fact that much injudicious and careless (we might almost say reckless) treatment has been resorted to. In the numerous instances here collected, we have sad specimens of the action of purgatives in hurrying the unfortunate patient to a more speedy and inevitable death."

The treatment in all such cases should be perfect rest of the body, and total abstinence from food or drink for forty-eight hours; the occasional use of ice, in small quantities, and at prolonged intervals might perhaps be permitted. Opium should be given to quiet the system and to prevent peristaltic action. In addition Mr. Poland advises the free and unsparing use of leeches, so soon as peritonitis sets in, to be replaced by hot fomentations, to be repeated with judgment and without fear.

VIII. *Cases of Paraplegia.* Second Series. By WILLIAM GULL, M. D.

In this second series of cases of paraplegia—the first, which contained sixteen cases, was published in the Report for 1856—the histories of seventeen cases are given, with the *post-mortem* examination of each, and remarks by the author. These cases are, perhaps, most particularly interesting from the aid afforded by their pathology for the solution of some of the most hidden questions in physiology; the instruction given by these experiments made by nature is, in our mind, more trustworthy than that extracted from those instituted by the most skilful experimental physiologists.

From Case XVII., Dr. Gull says that it may be concluded with certainty that the spinal cord may have its functions impaired, and even lost, and that suddenly, as far as the power of motion is concerned, without any distinct amount of anatomical lesion. He urges with earnestness the investigation of the nervous substance by other means than the microscope, and declares his belief that Dr. Stankey's observation on the variable specific gravity of the brain lets in some light in this direction. He believes that "it is from an increased knowledge of 'atomical' as distinguished from 'anatomical' conditions that we may hope for future advances in nervous pathology." Notwithstanding such statements at the commencement of his communication, Dr. Gull, in all the other cases, invariably attributes to alterations found by the scalpel and the microscope the symptoms observed before death, and would not listen with patience, probably, to an objection which these same statements would justly allow us to make to such a proceeding, namely, that these same symptoms might have been owing, not to these anatomical lesions, but to certain atomical changes in other, and apparently healthy, portions of the nervous system. We have ourselves no desire to urge such an objection, for we do not coincide with him at all in this peculiar belief.

In Case XIX. the prominent symptom was a total want of power to regulate the muscular contraction. The affection of sensation was limited to numbness, and formication of the hands and feet. The autopsy showed that the posterior columns were atrophied throughout their whole length. Brown-Séquard found in his experiments that when the posterior columns were destroyed for a limited extent, hyperæsthesia is produced below the seat of injury; when, however, they are destroyed throughout their whole length, instead of hyperæsthesia there is loss of sensibility to some degree. The effect upon the muscular movements is in accordance with the theory of the use of the posterior columns proposed by Dr. Todd, that they "propagate the influence of that part of the encephalon which combines with the nerves of volition to regulate the locomotive powers,

and serve as commissures in harmonizing the actions of the several segments of the cord."

In Case XVIII. the symptoms were numbness and weakness of the legs for several months, sensation not being impaired. At the autopsy the gray substance of the cord was found atrophied, and the posterior columns in a state of chronic inflammatory degeneration.

In Case XIX. there was paraplegic weakness of the lower extremities, characterized by a want of control over the contraction of the muscles; the voluntary muscles, generally, were emaciated. After death, chronic inflammatory degeneration of the posterior columns of the cord, throughout their whole length, was discovered; the disease was strictly limited to the posterior columns.

In Case XX. there was paralysis of both seventh nerves; the upper extremities were weak, the lower nearly completely paraplegic. The onset of the symptoms in this instance was acute. At the autopsy the substance of the cord in the cervical and dorsal regions was found to be somewhat softer than natural, but no other unequivocal change was discovered by the unassisted eye or by the aid of a common lens. On hardening the pons Varolii, medulla oblongata, and cord, and preparing sections of these parts, it was seen that in the anterior part of the commissure, throughout the length of the cord, but principally in the lumbar and superior cervical regions, and throughout the structure of the medulla oblongata, but chiefly at its superior part, there were exudation-cells scattered interstitially amongst the tissue. These cells were recent; they had not undergone fatty degeneration.

Case XXII. is interesting as showing that the substance of the cord may receive an injury through violent muscular exertion, whilst the surrounding tissues escape. The paraplegia, which was complete, supervened two days after a violent exertion in lifting a heavy weight. There was no injury of the membranes, ligaments, or bones of the spine, but opposite to the fifth and sixth dorsal vertebræ the cord was softened through all the columns into a thick, greenish, muco-puriform fluid, with a tinge of brown, which, examined by the microscope, was seen to consist of disintegrated nerve-tissue, with a few irregular collections of granules. The greenish and brownish tints of the softened parts were owing, probably, to blood-colouring matter.

In Case XXIII., after direct violence to the posterior cervical region, the legs, the left arm, and the sphincters were paralyzed; loss of sensation, which followed the injury and lasted for a few hours, gave place to hyperæsthesia, the sensation in the most distant parts returning first. The membranes of the cord were found healthy; opposite the fourth and fifth cervical vertebræ the substance of the cord was contused. On section, there was found ecchymosis of the posterior horn of gray matter on the left side, and of the adjacent part of the lateral and posterior columns. There were also other limited spots of ecchymosis on the right side, one in the right posterior column, and one in the anterior cornua of the gray substance. The development of hyperæsthesia in this case is in accordance with the experiments of Brown-Séquard, who has shown that injury of the posterior cornua of the gray matter is followed by hyperæsthesia of the parts below.

In Case XXIV. the patient was paraplegic in both the upper and lower extremities, having become so several hours after a fall backwards from a moderate height; there was loss of sensation in the paralyzed parts. After death an effusion of blood was found outside of the theca vertebralis in the neck; the cord itself was uninjured, the extravasation came from injury to the lower part of the body of the fourth vertebra, which had been fractured and the intervertebral substance torn.

An interesting phenomenon was observed in this case, one to which attention was directed in an interesting paper in the last number of this journal, entitled "Remarks on some Affections of the Spinal Column," by Dr. Packard, namely, the increase of temperature of the surface of the body. The skin, it is mentioned, became "intensely hot," and, at the same time, "the ribs scarcely moved in inspiration." To explain the phenomenon, Dr. Packard is inclined to believe that by the injury to the cord "a check is removed from some heat-generating agent —possibly the sympathetic system of nerves—which, no longer controlled by the regulating influence of the cerebro-spinal axis, carries on its functions to an

inordinate degree." (*Loc. cit.*, p. 65.) Another supposition which we venture to make, though with some hesitation, is this, that the nerve-force generated by the nervous system in its disturbed condition may be converted rapidly into heat. We know that electricity, under certain circumstances, may be thus converted, and electricity and nerve-force, if not identical, are very similar in many respects.

Case XXVII. has been recorded in order to afford an instance of how lesions of the cord are occasionally attended with an affection of the joints, not to be readily distinguished from that which occurs in acute rheumatism. In this instance the patient had received no injury, and she recovered, so that no *post-mortem* examination was made. The case might, we think, be very properly considered as showing rather how in acute rheumatism the spinal cord is occasionally affected. The patient had, in addition to redness, pain, and swelling of the larger joints, a white, furred tongue, hot skin, profuse perspirations, having an acid smell, and a systolic murmur over the left ventricle.

What Dr. Gull says of the effects of strychnia, when administered in affections of the spinal cord, is worthy of attention. His opinion in regard to it coincides, we know, with that of the physician in this country who has had the greatest experience in the treatment of diseases of the nervous system.

"The therapeutical agency of strychnia in organic lesions of the cord has yet to be proved. Judging from its effects, we should say its direct operation on the tissue was the very reverse of nutritive or reparative. If function is, as there can be no doubt, the effect of a mode of disintegration, agents which directly increase function must produce a disintegrating action. If this be a sound inference—and experience leads to the same conclusion—strychnia has but a limited therapeutic application in paraplegic affections. It is well known that immediate and striking effects can be produced by the drug, but these are often followed by hopeless bankruptcy of the spinal power."

This communication is accompanied by four exquisitely executed plates, representing magnified transverse and longitudinal sections of the diseased portions of the spinal cord in the various cases.

IX. *A Case of Pharyngotomy for the Extraction of a Foreign Body, with some Remarks.* By EDWARD COCK.

The foreign body lodged in the pharynx in the case whose history is given in this communication was a gold plate, shaped to correspond with the hard palate behind the incisor and bicuspid teeth, and holding a false central incisor tooth. The extreme length of the plate was an inch and five-eighths, while a line drawn from the extremity of the false tooth to the other edge of the plate measured exactly one inch. It was arrested in the gullet directly behind the cricoid cartilage. A pair of strongly-curved forceps detected the plate, but it could not be grasped, nor could it be moved from its position. With the hope that its position might possibly be altered by the action of vomiting, a pint of milk was conveyed into the stomach by a flexible catheter, and then half a drachm of sulphate of zinc and a scruple of powdered ipecacuanha administered. These emetics did not, however, excite even a sensation of nausea, and no others were tried. Some futile attempts were afterwards made to pass a looped wire round the plate, and also to manipulate with a flexible tube from the extremity of which a pair of forceps could be projected. Four days having now elapsed, and the patient beginning to feel seriously the want of rest and nourishment, it was determined to cut down and open the gullets.

The incision was made on the left side, and the operation was performed in the way usually advised in treatises on operative surgery. The gullet was opened by cutting against the most prominent part of the foreign body, which proved to be the false tooth. After the operation, the external wound was dressed without any attempt to bring the edges together, and for three weeks the patient was fed through an œsophagus-tube; at the expiration of another week the external wound had closed, and his recovery was complete; at least, with the exception of some modification in the tones of his voice, the result, in all probability, of injury done to branches of the recurrent laryngeal nerve during the operation.

In addition to his own case, Mr. Gull relates briefly the histories of seven

others, in which œsophagotomy has been performed. Five of these were successful, while in two death followed the operation. In one of the fatal cases, where the patient died in two days from collapse, the foreign body, a portion of bone, was swallowed during the operation, and found after death in the rectum.

The operation performed in this case by Dr. Gull, though the one usually recommended when opening of the gullet is thought indispensably necessary, is not the one we should prefer ourselves. It is one that presents very considerable difficulties, on account of the depth to which the dissection must be carried, and the important vessels and nerves in the neighbourhood. It is, besides, very difficult to distinguish the muscular fibres of the œsophagus, when they have lost their normal appearance from the inflammation occasioned by the presence of the foreign body, and covered by the blood which flows abundantly. The following operation, which has been recommended by very distinguished authority, appears to us to offer greater facilities: Divide the integuments in the median line, and separate and hold aside the sterno-hyoidian muscles, so as to expose the isthmus of the thyroid gland; under this pass a blunt needle, carrying a double thread, so as to make two ligatures, between which the isthmus is divided; the left lobe of the thyroid gland is separated by a blunt instrument, which, passing close to the trachea, must necessarily encounter the œsophagus, which is opened in the usual way.

Before, however, proceeding to any operation in these cases, it would certainly be very advisable to exert a greater degree of ingenuity and patience in the employment of ordinary measures, than appears to have been exerted here. Although it was supposed that the action of vomiting might be beneficial, only one emetic dose, and that of ipecacuanha and sulphate of zinc, was administered. To extract the body no other instruments were used but a looped wire and curved forceps, and yet there was sufficient space to enable a flexible catheter to be passed down into the stomach. The well known history of the manner in which a fish-hook was extracted from the œsophagus, shows what a certain degree of ingenuity may accomplish in these cases. In this case it seems to us that a bag of caoutchouc attached to a tube could have been introduced empty beyond the gold plate, then distended so as to loosen any entanglements formed by it with the walls of the œsophagus, when it would be removed with the withdrawal of the instrument. In the *Memoirs* of the Academy of Surgery of France, vol. iii. (Paris, 1743), some most curious cases of foreign bodies arrested in the œsophagus are given, and in some of them sponge was used successfully, to distend the canal and thus loosen the body and make it fall into the stomach. It is but right to state here that Mr. Gull, who refers to this memoir, is incorrect in his declaration that in no single instance does any attempt appear to have been made or contemplated to cut into the pharynx or œsophagus, and relieve the patient. The operation is discussed, and two very remarkable observations are given to show how the œsophagus has been largely opened, and yet the patient has recovered. (*Loc. cit.*, p. 151 *et seq.*)

This operation of œsophagotomy, or pharyngotomy, must be regarded as one never to be performed, unless absolute necessity calls for it; the ancient plan recommended by Aëtius for the removal of foreign bodies arrested in the œsophagus, we had rather see adopted in general practice.[1] Before proceeding to active measures in these cases, the surgeon should make very sure that there is undoubtedly a foreign body lodged in the gullet, for the sensations of the patient himself are by no means to be trusted. We know of an instance where no less distinguished a surgeon than M. Nélaton made several ineffectual efforts to remove from the pharynx, with forceps, the great horn of the hyoid bone. The patient was sure that a piece of bone had become arrested there, and the finger pushed deeply into the throat came in contact with a small resisting body—which ought to have been there, and which fortunately remained.

X. *Contributions to the Practical Surgery of New Growths or Tumours.* Series II. *Fibro-plastic Growths.* By John Birkett.

This communication is made in pursuance of the design, announced in the

[1] See the Medical Profession in Ancient Times, by John Watson, M. D., p. 196.

last volume of *Guy's Hospital Reports*, of illustrating in a series of cases the natural history of every form of new growth which has come under observation within the walls of the hospital. In Series I. several cases of cancer were related to illustrate the progress and result of that disease. The two varieties of fibro-plastic growths are comprised in this paper—the soft, gelatinous, and rapidly growing; and the more firm, fibrous, and more slowly growing. The number of cases is, altogether, fourteen. The conclusions deduced from them, by Mr. Birkett, are the following:—

"1. That the elementary tissues comprising the fibro-plastic growths differ from those entering into the composition of the tumours called carcinoma.

2. That the natural history of the fibro-plastic growths is different from that of carcinoma.

3. That the fibro-plastic growths may recur at the primary site of the new growth, or in its immediate neighbourhood.

4. That, unlike carcinoma, there does not appear to be a disposition to the production of fibro-plastic growths in any of the viscera of the chest or abdomen.

5. That when secondary growths are developed in these organs, it will probably be carcinoma.

6. That the glands of the lymphatic system do not become secondarily involved in disease with the fibro-plastic growths, as they do in carcinoma.

7. That amputation of a portion of a member will not in every case prevent the reproduction of fibro-plastic growth in the stump, even although a joint intervene between the seat of the primary development and the stump.

8. That excision of a primary fibro-plastic growth may be undertaken with a better chance of the eradication of the disease than follows the removal of carcinoma.

9. That by the reproduction of a fibro-plastic growth, and as the result of changes taking place in the tumour itself, death may ensue without the viscera being affected by any organic disease.

10. That the progress of the disease is slower than carcinoma; that is, that the time occupied by the development of the recurrent growths may extend over a very long series of years.

11. That the fibro-plastic growths are developed at a somewhat earlier period of life than carcinoma.

12. That they appear to be closely in relation with fasciæ, and very often to spring up in those parts of the body where the fascial envelops or tendinous aponeuroses are developed in the most prominent manner.

13. That they always form circumscribed lobes or masses, and never infiltrate the tissues of the organs of the body like carcinoma so frequently does."

This communication is accompanied by two plates, the second of which, representing the dissection of an amputated leg, illustrates remarkably well how these growths are connected with the fasciæ and the tendons of muscles.

XI. *Contributions to Dental Pathology.* By S. JAMES A. SALTER, M. B., F. L. S., &c.

These contributions are three in number. The first is upon the Shedding of Teeth and Exfoliation of the Alveolar Processes, consequent upon the Eruptive Fevers.

Mr. Salter states that, during the past few years, he has had under his care a number of cases in which necrosis and exfoliation of the alveolar processes of the maxillæ, accompanied by shedding of the contained teeth, has been one of the secondary consequences resulting from attacks of the eruptive fevers—scarlet fever, measles, and smallpox. After scarlet fever there were some eight or ten cases, after measles three or four, and after smallpox only one. Though following different forms of eruptive disease, they were all so singularly uniform in their origin, course, and entire history, that, in Mr. Salter's opinion, they would seem to have a generic identity.

In all these cases the first evidence of exfoliation was always apparent within eight or nine weeks after recovery from the eruptive fever, usually within four or five. It was never preceded by pain or swelling, or accompanied by periosteal abscess; the suppuration always occurred at the part where the gum peels

from the alveolus, which appears to be the simple method of exposing the dead bone. Whichever jaw has been the subject of exfoliation, it usually occurs on both sides. It occurs in patients about five or six years of age, during the time that the most active tooth-development is going on in the jaws. In every instance the temporary molar or molars, and the corresponding bicuspid or bicuspids, with their containing alveoli and loculi, have been the parts to suffer. In no one case was the shedding of teeth confined to the temporary set; the successional (bicuspids) have always been involved, and shed also.

The occurrence of these cases is explained by Mr. Salter as depending upon the fact that the teeth are modified papillæ, are members of the tegumentary system, and that the *materies morbi* in the eruptive fever affects them by virtue of their being dermal or tegumentary organs. Blighted and destroyed, they light up in the alveolar periosteum an inflammation which, while it is destructive, is curative; while it destroys the bone, it accomplishes the casting off of effete and dead organs.

The second contribution is on the subject of Warty Teeth. The teeth sometimes, though very rarely, become *warty*, that is, have compound papillary projections attached to them. The explanation of such specimens is obvious: the superficies of a tooth is the part first formed, and it corresponds in every particular in shape with the original formative pulp, so that it follows that the pulp must in these cases have borne the same relation to a normal pulp as a tegumentary wart does to normal papillary structure.

It is worthy of remembrance by the surgeon, that teeth occasionally exhibit such change of form and aspect that they can no longer be recognized as teeth, and that they may be mistaken for necrosed bone. In one of the cases recorded by Mr. Salter, an eminent metropolitan surgeon, in order to extirpate what appeared to be a piece of porous bone denuded of periosteum, removed the angle of the man's jaw (a young man, twenty years of age), and thus put an end forever to efficient mastication, when the whole of the ungainly mass could have been readily extracted with a pair of forceps.

The third of these interesting contributions is on Polypus of the Tooth-Pulp. In this affection the pulp of the tooth sprouts into a mass having very much the aspect and about the same sensitiveness as the gum. The tooth itself is never the subject of odontalgia, and is always imperfectly calcified, "presenting that peculiar globular calcification in which the substance of the dentine becomes rapidly sodden with saliva, and carious without limit from the enamel to the pulp." It is believed by Mr. Salter that the changes in the pulp—hypertrophy, with structural modification—are owing to some influence exerted upon it from the presence of the saliva.

This communication is accompanied by two lithographic plates containing numerous figures, representing warty excrescences on the teeth, and polypus of the tooth-pulp, as they appear to the naked eye, and also under the microscope. Two wood-cuts in the text illustrate the article on shedding of the teeth and exfoliation of the alveolar processes.

XII. 1. *On the Alleged Sugar-forming Function of the Liver.* 2. *The Influence of Diet on the Liver.* By F. W. Pavy, M. D., *London*.—This communication is one of exceeding interest and importance, certainly in these respects not second to any in the whole volume. The experiments detailed by Dr. Pavy, and the deductions he draws from them will aid materially in the solution of the problems that now occupy most the attention of physiologists. From the care and skill with which the experiments were evidently made, and the great number of times they were repeated, we must rely upon the results uniformly obtained by them. The deductions drawn from them are fully warranted, indeed they are forced upon us. A little reflection too will show clearly that they are not only not opposed to the facts obtained by Bernard and others, in their experiments, but entirely in accordance with these facts, and only opposed to the *interpretation* hitherto given to them.

Experiment has proved, beyond a doubt, that a large quantity of sugar is met with in the liver, and in the blood of the hepatic veins, and of the right side of the heart of an animal that has been for some time previously restricted from

the ingestion of saccharine materials, *after the death of the animal*. The question Dr. Pavy desires to solve is whether sugar is natural to the right-ventricular blood of the *living animal* and to the *living liver*, for to find sugar on examining the blood or the liver after death, is no proof that it was also present during life. The results he has obtained in endeavouring to solve this question are very striking, and lead one irresistibly to the conclusion that during life sugar does not exist in the liver, but a substance which happens to be with extreme facility, by a process allied to fermentation, convertible into sugar, and which has the power to resist transformation into sugar, whilst located in the tissue of the living and healthy liver. With the destruction of life this power of resistance is at an end, and the organ then becomes speedily charged with the saccharine principle.

When blood was removed by Dr. Pavy during life from the right ventricle by means of a catheter passed into the right jugular vein, it was found to contain only the merest trace of sugar, the reaction with the Barresvil solution being sometimes so slight as to be liable to be overlooked altogether. Dr. Pavy made upwards of sixty observations to establish this fact. When in these cases the animal was killed, the blood collected after death from the right ventricle occasioned with the same reagent an abundant orange-yellow precipitate of suboxide of copper.

When an animal is pithed, and a minute or two is allowed to elapse before the chest is opened, the blood flowing from an incision into the right side of the heart will be found strongly saccharine. When the chest was instantly opened by Dr. Pavy after the pithing was effected, and a ligature placed around the base of the heart, the contents of the right ventricle were found to be free from sugar.

Having discovered that the sugar-forming substance of the liver was not transformed into sugar, whilst in contact with a ferment, when an alkali was present, Dr. Pavy immediately after death injected a strong solution of potash into the liver of a dog. The presence of sugar was in vain sought for, either in the liver or the contents of the circulatory system. Again injecting only half of a liver, in the same manner, this half contained no sugar, while the other gave the ordinary amount. When the organ was allowed to remain a few moments after death before the injection was practised, so as to give time for the *post-mortem* transformation of liver material into sugar to take place, the presence of sugar was as easily shown as if the potash had not been made use of.

Knowing how much changes partaking of the character of fermentation are promoted by an elevated temperature and checked by cold, the influence of a freezing mixture upon a piece of liver removed at once after death was essayed. When an animal was suddenly killed by the destruction of the *medulla oblongata*, and the abdomen instantly opened and a piece of liver cut off and plunged into a mixture of ice and salt—mixed half an hour before, to have it liquid and of a much lower temperature—the *post-mortem* transformation of the liver material was prevented, and an absence of sugar was observed. Bernard had noticed that if the spinal cord be divided above the origin of the brachial nerves, "a peculiar modification was produced in the liver, a sort of perversion of secretion, or rather a veritable arrest in the series of transformations that take place in the liver in order to change into sugar the albuminoid matters of the blood." (*Leçons de Physiologie Expérimentale, &c.*, Cours du Semestre d'hiver, 1854–1855, page 374.) In the experiment he relates, the animal was killed the day after the division of the cord; a decoction of a part of the liver was made at the very moment of the autopsy, and not the slightest trace of saccharine matter was detected; a portion of the same liver left to itself was taken twenty-four hours afterwards, and it contained an enormous quantity. After making an hypothesis to explain this, he makes a second one which, he adds, is more probable than the first. "This new hypothesis would consist in saying that the transformations that take place in the liver require, not only nervous influence, but also a sufficient temperature, and that the temperature of the animal (a rabbit) before you being no more than 24° (75° Fah.) at the time it was sacrificed it is not sufficient for the accomplishment of the phenomena in question. You know, in fact, that certain chemical actions cannot take place without a certain quantity of heat, and that in animals whose temperature varies, they cease when the cooling has reached a certain point, although the nervous excita-

bility should then appear more intense, as takes place precisely in the rabbits in which we have divided the spinal cord. It may be the same for the glycogenic function; the temperature to which the animal has fallen may be no longer sufficient for determining the series of transformations that finally give sugar; and what proves that heat favours this formation is this, that after having removed the liver thus modified, if you expose it to a high enough temperature, the sugar is soon seen to appear in the tissue. *It would probably be the same if, without extracting the hepatic organ, the animal were placed in a situation where its normal temperature, which is* 37 *or* 40 *degrees* (99° or 106° Fah.) *would be maintained without allowing the cooling to take place.* If, on the contrary, the liver should be exposed to a low temperature, sugar would form therein but very slowly." (Pp. 378–9.) We have extracted the whole of the passage, for it is interesting to notice how M. Bernard's hypothesis coincides with Dr. Pavy's manner of interpreting these phenomena. The experiment suggested in the part we have italicized, was performed by Dr. Pavy, and a rabbit, after having its spinal cord divided as above said, was placed over an engine boiler where the thermometer stood at 88°. At the end of three hours the animal was killed, and the indication of sugar in the liver was as strong as if the specimen had been derived from an animal which had been suddenly sacrificed without having been submitted to any previous operation. Dr. Pavy found, also, that when the temperature of the animal was reduced by other means than by the division of the spinal cord, the same condition of the liver was met with. By oiling the coats of animals so as to deprive them of their non-conducting investment, and exposing them to cold, their temperature rapidly falls; if killed when the temperature had descended to about 70° or 80°, the liver was found free from sugar immediately subsequently to death, and became strongly saccharine afterwards, precisely as in the case of section of the cord.

With frogs, Dr. Pavy found in his experiments that when they were killed at an elevated temperature the *post-mortem* transformation of liver material into sugar takes place—as in warm-blooded animal—so rapidly, that sugar is found under the ordinary process of examination. When, on the other hand, the animal possesses a low degree of temperature at the time of death, the *post-mortem* formation of sugar is so retarded, that an examination of the liver is easily effected before a change has taken place to any considerable extent. M. Bernard, it may be interesting to state, obtained precisely the same results, and communicated them to the French Academy in March last; he attributes, however, these results to the "*ralentissement de la circulation qui est lié à l'abaissement de la température!*"

From a consideration of the facts brought forward by Dr. Pavy, we think it must be concluded with him that though the liver and the right ventricular blood are strongly saccharine *after death*, yet that this is not their condition *during life*. It would appear that there is formed in the liver a substance which is convertible with extreme facility into sugar, by a process allied to fermentation; that this substance seems to have the power to resist this transformation while located in the tissue of the living and healthy liver, but with the destruction of life this power of resistance is at an end, and the organ then becomes speedily charged with the saccharine principle. Until other facts are made known, we feel inclined to accept the conclusions of Dr. Pavy, which not only appear to be true themselves, but also enable us to explain the difference in the results obtained by other experimenters. It may be added that, in accordance with them, diabetes must be considered as dependent upon some defect in the functional performance of the processes of the liver, owing to which the substance naturally produced by it is incapable of resisting transformation into sugar, as it does under normal circumstances.

The second part of this communication is on the Influence of Diet on the Liver; and before giving an abstract of its contents, as we have just done of the first part, we will, on account of the interest now attached to the subject, recall, in as short a space as we can, the present state of the science on this point, at least so far as the influence of diet upon the quantity of sugar-transformable material in the liver is concerned. M. Bernard, in a memoir read before the Academy of Sciences, March 23, 1857, maintains that "the liver of dogs nou-

rished exclusively with meats possesses the property, special and peculiar to that one organ, of creating a glycogenous matter analogous to vegetable starch, and having the power, as it, of becoming afterwards transformed into sugar, in passing by an intermediary state to that of dextrine. In herbivorous animals the glycogenous matter is likewise produced in the liver, but he does not doubt that some is also formed at the expense of amylaceous matters." The most important paper that has appeared in contradiction to these doctrines of M. Bernard is that of M. Sanson, entitled "On the Origin of Sugar in the Animal Economy," published in Brown-Séquard's *Journal de Physiologie*, for April, 1858. According to M. Sanson, it is established, by the results of his experiments, that the source of sugar in the animal economy is always exterior, and resides exclusively in the alimentation, whether this be of a vegetable or an animal nature. "In the normal conditions of their existence," says M. Sanson, "herbivorous animals find the amylaceous principle in the vegetables by which they are nourished, and where it is, as we know, elaborated in great abundance. They transpose it into dextrine, a part of which undergoes, in their own economy, the whole series of metamorphoses by which this principle must pass in order to serve for the support of life, and be destroyed and eliminated; the rest of this same dextrine is accumulated in their tissues, or, rather, is incessantly present, by the fact of the constant access of the blood that contains it in excess relatively to their physiological necessities. The carnivorous, in their turn, to the alimentation of which these are destined in the far-seeing economy of nature, find in this excess of dextrine the primitive element of the sugar necessary for the accomplishment of their functions, and consequently are not forced to elaborate it." (*Loc. cit.*, pp. 273, 274.)

This paper of M. Sanson was the occasion of a report to the Academy of Medicine, in which M. Poggiale, the reporter, says:—

"In the present state of the science nothing seems better demonstrated than this, that the glycogenous matter met with so abundantly in the liver of carnivorous animals is not furnished by their food. Whatever be the alimentation, whatever be the aliments on which we operate, a great quantity of sugar is constantly found in the liver, while its presence in other parts of the organism is accidental, and is only due to certain physiological conditions that can most generally be modified. The glycogenous matter is only found in the other organs of herbivorous animals when these animals are nourished with aliments rich in amylaceous substances."

The views of M. Sanson are not sustained by the experiments of Dr. Pavy, which would show that the so-called glycogene belongs particularly to the liver, and is secreted by it from saccharine, amylaceous and other principles contained in the blood circulating through its capillaries. The facts which he has brought forward, showing that sugar does not belong to the healthy liver during *life*, alter, however, the position of this subject so as to render unnecessary the discussion of whether the production of sugar results from a process of secretion or of a simple chemical transformation. Whatever in future may be definitely shown to be the particular purpose of glycogene, or hepatine, as Dr. Pavy called it with more propriety, as it is not *sugar producing*, in the economy of life, it certainly does not appear to be formed, as has been thought, for the object of transformation into sugar.

In experimenting upon the influence of diet upon the liver, Dr. Pavy found that the size of this organ is influenced to a most astonishing extent by the kind of food that is given; and that the alteration it thus undergoes is chiefly, if not entirely, due to the relative amount of hepatine present. The processes by which he obtained his results are carefully detailed, particularly the manner of collecting the hepatine, and they appear to us to be deserving of all confidence. The exact composition of hepatine he states that he is not acquainted with; and as it is a matter of some interest we will give it here, on the authority of M. Pelouse, as carbon 39.8, hydrogen 6.1, oxygen 54.1; corresponding to the formula $C_{12}\,H_{12}\,O_{12}$.

When dogs were kept exclusively on a diet of animal food, the relative weight of the liver to the animal was 1–30; and the relative amount of hepatine in the liver was 6.97 per cent. When they were kept upon a diet of vegetable food

the relative weight of the liver was 1–15; and the quantity of hepatine was 17.23 per cent. When they were fed upon animal food with an admixture of sugar, the relative weight of the liver to the body was 1–16½; and the amount of hepatine yielded was 14.5 per cent. Some experiments which Dr. Pavy records, that he has made upon rabbits, are strikingly corroborative of the deductions he has drawn from the observations on the dog.

If this hepatine is not naturally formed for the purpose of transformation into sugar, the question as to what naturally becomes of it, is most interesting. Dr. Pavy believes that in its solution attention will have to be specially directed to the bile and to the production of fat, a material which is undoubtedly largely formed, particularly under certain kinds of vegetable food, in the animal system.

XIII. *On Poisoning by Nicotina, with Remarks.* By ALFRED S. TAYLOR, M. D., F. R. S.

In this communication Dr. Taylor gives the history of a case where a gentleman committed suicide by nicotina, with an account of the manner in which this substance was sought for and detected in the body, and some very interesting considerations upon its action as a poison.

The only other case of poisoning by nicotina on record, is that which occurred about eight years ago in Belgium, where a M. Fougnies was murdered by the Count and Countess Bocarmé, his brother-in-law and sister, while dining with them in the chateau of Bitremont. In that instance, M. Stas conducted the chemical investigation, and succeeded in detecting the poison in small quantity in the tongue and fauces, stomach, liver, lungs, and in a wooden plank of the floor of the room in which the deceased was sitting.

In his case, in searching for the poison, Dr. Taylor made use of the plan pursued by M. Stas, and also of that advised by Orfila. By both nicotina was detected, but that of M. Stas enabled a greater quantity to be extracted.

As to the action of nicotina in destroying life, Dr. Taylor believes that the degree of purity of the nicotina employed may, in some measure, account for the different conclusions arrived at by experimenters, some finding it to act exclusively on the muscular system, while others contend that the circulation alone is directly affected. M. Bernard, it will be recollected, found that when pure it spent its effects chiefly on the capillary circulation, while, when partially decomposed, the functions of the heart and lungs were directly affected. (*Leçons sur l'Effet des Substances Toxiques et Médicamenteuses*, p. 397.)

This paper of Dr. Taylor, as all that he publishes of the kind, is of the highest importance in a medico-legal point of view. W. F. A.

ART. XX.—*A Treatise on the Human Skeleton—(including the Joints).*—By GEORGE MURRAY HUMPHRY, Esq., M. B. Cantab., F. R. C. S., Surgeon to Addenbrooke's Hospital, Lecturer on Surgery and Anatomy in Cambridge University Medical School. 8vo. p. 620: Cambridge, Macmillan & Co., 1858.

MR. HUMPHRY, in the preface to his work upon the Human Skeleton, informs us that it has always been to him a matter of regret, that the study of the bones should be regarded as dry and tedious. In reality it is, and ought to be, one of the most interesting of all studies, essential, as he remarks, alike to the practical surgeon, and to the philosophical anatomist. Looked upon, therefore, in this light, we cannot help agreeing with the author, that the framework of the human system deserves a more minute investigation, and a more careful study than is usually bestowed upon it.

We do not intend in our brief space to enter upon any very critical examination of Mr. Humphry's somewhat voluminous work; our object is rather to draw attention to the manner in which the author himself has considered his subject, leaving to those of our readers who may be more particularly interested in the matter, the task of passing in detail the various topics considered in the book before us.

The earlier pages of the work are devoted principally to general observations upon the skeleton, including the chemical composition, the shape, structure, and physical characteristics of bones, their development and mode of growth; the nature and uses of the periosteum, and the peculiarities of the senile skeleton. Into the latter topic Mr. Humphry enters at some length, and furnishes us with much valuable information relative to the changes which occur in bones during the advanced periods of life.

It has always been a prevalent opinion, that the proportion of the earthy constituents of the bones gradually increased with increasing age, and that the change of structure in bone thus brought about, acted as one of the most powerful predisposing causes of fracture in the aged. The various statements, however, upon this subject, have been conflicting in the extreme, and the only certain result arrived at by our author, is that "the bones of the aged differ a good deal in different individuals."

This want of uniformity in the characters of the bones of old people is probably to be explained by the constantly varying relations of absorption and deposit. In one class of cases, these processes being nearly balanced, but little alteration, save in the enlarged condition of the cancelli results; in other instances the bony deposit may exceed the process of absorption, so that the bone may become absolutely increased in weight, hardness, and solidity. The third and most numerous class of persons are those in whom the absorption goes on with greater rapidity than the deposit, producing that brittle condition of the bones already alluded to. Be the explanation of the fact what it may, it seems certain, however, that in many cases the earthy constituents are not relatively increased, a circumstance sufficiently proven by the experiments of Stark and Von Bibra, who found that the chemical constituents of old, and of adult bone are often relatively the same.

Were we asked to point out any portion of Mr. Humphry's work, which possessed peculiar interest, we would unhesitatingly lay our finger upon those pages occupied with the consideration of the joints. The examination of these parts has evidently been conducted by the author with the most rigid scrutiny, and the reader is presented with many anatomical facts which are not frequently alluded to. Such for example are the remarks upon the influence of atmospheric pressure on the joints, especially the ball and socket-joints; the fact that the bones are in no instance held together by their shape alone; that the retention of the articular surfaces of the joints in apposition depends entirely upon the ligaments and surrounding soft parts; and that the movements of the joints are under no circumstances arrested or limited by the shape of the bones, or by the contact of their edges. The checking of the movements in every articulation is produced either by the tension of the ligaments, or by the pressure of the soft parts; this can be clearly seen by examining the elbow-joint, in which, although the coronoid and olecranon processes enter, during flexion and extension their respective fossæ, yet they are never permitted quite to reach the bottom of these cavities. All jarring shock to the limb is thus prevented, and the movements of the joint are executed with safety and precision.

The much vexed topic of the structure of articular cartilage is closely examined by Mr. Humphry. He believes it to be non-vascular, and that only in morbid conditions have vessels ever been traced into it. The effect of disease upon this structure is also alluded to, and we are told "It is worthy of remark in a practical point of view, how quickly the muscles that act upon the joint fall away when disease attacks its cartilages. A year of simple synovial disease will not produce so much effect upon the adjacent muscles as a month or even a week of ulceration of the cartilages. Hence this wasting of the muscles becomes a symptom of great importance in assisting us to arrive at a diagnosis as to which of these two structures is involved, as well as in enabling us to decide whether disease, which commenced in the synovial membane, has extended to the cartilages"—p. 77.

In the chapter upon the proportions of the human figure, we find many curious analogies. One of these we subjoin, as to some of our readers it may be novel and interesting.

When speaking of the relative size of the head and trunk of the body, our

author informs us that the great modern artists have been in the habit of making the head about one-eighth part, and the face about one-tenth of the whole figure, giving to the lower extremities one-half the length of the body, and to the extended arms, the same distance as from the sole to the crown. He then adds: "In like manner the height of the columns in the various styles of architecture, and the dimensions of their capitals were regulated in certain definite proportions to the diameter of the several columns. The radius of the base was usually taken as the standard of measurement, and called the "module." Thus the Tuscan column measured 16 modules, the Ionic 18, and the Corinthian 20. Gradually, as the science of architecture made progress, the columns were rendered lighter and more graceful, and it is interesting to observe that the several parts were elongated, until the column, with its capital and base, acquired nearly the proportions of the human frame. Considering the capital as in the place of the head, the whole length of a Corinthian pillar is eight and a half heads." The "module" or standard proposed by Carus for estimating the comparative proportions of the human figure is one-third of the length of the spinal column, and with this ratio of measurement, the various portions of the body have been found to correspond in a remarkable manner.

Passing from the subject of general considerations, our author next takes up the anatomy of the various bones, commencing with the vertebræ and the spinal column. A point of interest connected with this latter is the position of the so-called "weak-points." The first of these is the junction of the dorsal with the lumbar portion of the column. The reasons for the existence of this weak point are stated by Mr. Humphry to be, that although it has to bear nearly as great a weight as the part of the column below it, its vertebræ are proportionately small; then its transverse and spinous processes are short; and again it is near the centre of the spinal column, and subjected to a great length of leverage. Lastly, he observes, that the component parts of the spinal column, both above and below, are comparatively fixtures, so that all movements are transmitted to and felt at the point in question, producing that disagreeable jar, or shock, or, as it is commonly termed, a strain in the back, so frequently experienced as the consequence of a misstep. Another weak point is found at the dorsal curve; here is the usual seat of angular curvature, the result of absorption or ulceration of the bodies of the middle dorsal vertebræ. The senile curvature, so frequently the accompaniment of old age, is produced by the gradual weakening of the various dorsal ligaments, and the resulting absorption of the foreparts of the bodies of the vertebra.

The description of the individual bones of the head forms a long and well written chapter of the work; the tediousness incidental to such minute description being well relieved by the interspersion of practical physiological and pathological facts. Especially is this the case where the author is treating of the various sinuses of the skull, and the meatuses of the nose.

At page 301, we have introduced to our notice a new ligament, the short internal lateral ligament of the temporo-maxillary articulation. This ligament, which, according to Mr. Humphry, has escaped the attention of anatomists, arises immediately underneath the long internal ligament, and passes to be inserted upon the ridge leading from the inner extremity of the condyle, and immediately behind the insertion of the external pterygoid muscle. At page 327, when treating of the imperfections of the sternum, the case of M. Groux, so familiar to many of our readers, is referred to. Clefts in the sternum are, we are told, more frequently met with in the lower than in the upper portion of the bone, a fact in accordance with the mode of closure of the thoracic cavity of the fœtus. A point of interest in the case above referred to, is the existence of the soft parts over the sternum; since it most frequently happens in cases of congenital fissure of this bone, that the skin and tissues which should cover it, are also deficient.

The mode in which the movements of inspiration and expiration are effected, are minutely discussed, and the relations of the thoracic walls to each other during these acts are illustrated by a series of diagrams. The remaining portions of the volume are occupied with the study of the bones of the extremities, and frequent and apt allusions are made to the injuries to which these parts and

those adjacent are subject, as fractures, dislocations, and injury or rupture of the surrounding muscles. The ligaments of the shoulder, and hip-joint, have received, as their importance well warrants, a full share of our author's attention, and we do not remember to have elsewhere seen a more truthful or more accurate description of the former than has been afforded us by Mr. Humphry.

In bringing our brief notice of this very admirable volume to a close, we cannot but express the satisfaction we have derived from the perusal of many of its pages. The book issued from a Cambridge press is essentially a volume of luxury. and is, we believe, the most voluminous treatise on the anatomy of the skeleton yet published. The only recent treatise with which it can be well compared is that of Mr. Holden; this latter, however, is confined simply to the description of the bones, and does not, we think, include the examination of the joints. The plates, however, in Mr. Holden's work, are superior to those of the volume we have just noticed. Indeed, it had been our intention to advert more strongly to the character of Mr. Humphry's illustrations, but as we are told in the preface, that the artist is the author's wife, gallantry forbids us so to do. We doubt not, that should the work in question ever reach a second edition, many alterations in the engravings will have suggested themselves to the author.

J. H. B.

ART. XXI.—*The Microscope in its application to Practical Medicine.* By LIONEL S. BEALE, M. B., F. R. S., Professor of Physiology and General and Morbid Anatomy in King's College. 2d edition, 8vo.: London, 1858.

THE physician who at the present day decries the use of the microscope, and tauntingly asks what it has accomplished for practical medicine, is possessed of a degree of boldness, which, resulting as it does from ignorance and prejudice, is not entitled to the respect which ordinarily is accorded to this element of character. And yet, notwithstanding the thousand evidences that a material portion of our recent progress in medicine is due to this instrument, we find those (many of them occupying high positions in the profession) who with an obstinacy worthy of a better cause refuse to be enlightened, and are content to grope their way in the venerated darkness of the past. No arguments reach them, no evidence convinces them, no inducements persuade them. But thus it has always been with every important discovery. Harvey was ridiculed and persecuted, and in the time of Galileo there were not wanting those who could see more stars with the naked eye than with a telescope. We smile now at such recollections, and those who decry the microscope smile with us, little dreaming that the time is at hand when they will be classed with the opponents of the telescope, the steam engine, the magnetic telegraph, and other great works which have triumphed in spite of opposition.

It would of course be foreign to our purpose were we in this place to refer in detail to the long list of valuable discoveries which medical science has received through microscopical investigation. They are to be found in the standard works on anatomy, physiology, pathology, and that science of microscopical creation—histology.

But although the microscope has done much for our profession, there is still a great deal for it to accomplish; and, therefore, we hail with pleasure the appearance of every work calculated to lighten the labour of investigation, and to instruct those desirous of devoting themselves to the task of elucidating subjects as yet imperfectly understood.

This volume of Dr. Beale's must undoubtedly prove useful to those engaged in microscopical observations. The author is so earnest, so thoroughly imbued with love for the subjects of his scientific labours, that with his experience he could not fail to produce a work useful to those following kindred pursuits. It is also decidedly superior in every respect to the first edition, in which all reference to several important subjects was omitted.

In using the microscope there are so many precautions to be taken, so many causes of misinterpretation to be avoided, that the greatest care should be

exercised by every observer before deciding definitely upon the value of the appearances presented. Dr. Beale, we think, does not lay sufficient stress upon these points, and so far we regard his work as being defective.

The range of subjects considered by Dr. Beale is very extensive, and, perhaps, more so than is requisite in a work devoted, as its title imports, to instruction in the use of the microscope in clinical investigation. Thus, the art of lithography, the respiratory apparatus of the lower animals, the kidney of the horse, the specific gravity of the brain, &c., though all useful and important subjects of inquiry, are, we think, somewhat out of place in a work of the character of that before us. It is difficult, however, to quarrel with an author for giving us more than he promises.

The volume is divided into three parts. Part I. treats of *the apparatus necessary for the examination of objects of interest in a clinical point of view, of the practical operations required for demonstrating objects, and of recording the appearances observed.* This division occupies about a third of the work, and contains a great deal of matter useful to the student. We are glad to see the stress laid by Dr. Beale upon the advantages to be derived from submitting objects under microscopical observation to the action of chemical reagents—micro-chemistry, as it is called. By neglecting the use of chemical tests, the microscopical investigator will constantly fall into errors, some of which will certainly not conduce to the formation of an exalted opinion of his perceptive faculties.

In Part II. *the demonstration of the microscopical characters of tissues in health and disease, morbid growths and deposits, the fluid products of disease, and animal and vegetable parasites,* are considered. In this section the various parts and organs of the body are brought under notice, and their microscopical characters described. In addition to the other subjects mentioned in the heading, the various secretions and excretions are considered.

The illustrations which abound in the volume are in general well executed. We must, however, protest against the deception practised in the assertion on the title page that there are 270 wood cuts. Certainly most if not all persons would infer from the statement that there were 270 *different* cuts, whereas many of them are duplicated, and even in some cases triplicated. For instance, figs. 1 and 2 are reproduced as 211 and 213, fig. 3 as 210, fig. 4 as 261, fig. 5 as 177, fig. 6 as 183, fig. 9 as 137 and 217, in which latter it is inverted in order to mystify it a little, fig. 68 as 92 and 101 and 102, fig. 75 as 239, &c. &c. This plan is so thoroughly carried out as to reduce the number of different cuts nearly one half. Space is thus occupied which should have been more profitably filled, or else the size of the book should have been reduced and its cost lessened. Many of the cuts, moreover, are of the most trifling character, and altogether useless.

We must also notice the style of composition, which is vicious in the extreme, and, from its undignified character, is entirely unbefitting a work pretending to a scientific status. We cite one or two examples of inelegance of composition, premising that similar instances are to be met with on almost every page. At page 161 the author informs us that "perhaps the best organ for examining the structure of basement membrane is the kidney." At page 283 starch *globules* are mentioned; and at page 352 he states that "fungus hæmatodes is applied to any soft, highly vascular, bleeding fungoid growth."

Dr. Beale's obligations to his friends are so frequently expressed for the most trifling favours, as to lead to the supposition that notoriety is at a premium amongst his acquaintances. Thus, he thanks "Mr. Spratly" for specimens; his "friend Dr. Scott Alison" sent another; his "friend Dr. Sankey" furnished some cystine; his "friend Mr. Cubitt" forwarded a specimen of chylous urine; his "friend Mr. Masters" also sent a specimen of urine; and we might refer to numerous other expressions of Dr. Beale's remembrance.

Notwithstanding the manner in which Dr. Beale's book is written, it contains, as we have already stated, a great deal of valuable information, and fills a place in microscopical literature which should not be allowed to remain vacant. We are, therefore, for want of a better treatise on the subject, forced, in a measure, to recommend the volume before us to those commencing microscopical investigations, trusting that ere long we may be enabled to ask attention to one more worthy of commendation.

W. A. H.

ART. XXII.—*Nutrition in Health and Disease.* By JAMES HENRY BENNET, M. D., &c. London, 1858. 8vo. pp. 210.

THIS is a small book on a great subject, a subject upon which, at the present time, too many good books can scarcely be written, for with all our progress in medicine, physiology, and dietetics, with all the positive knowledge we have acquired on these subjects, we have really advanced but little towards a thorough understanding of the functions connected with nutrition; and, worst of all, those points which *have* been established are practically disregarded by those who know better, and are rarely enforced upon the ignorant, either by precept or example, by those whose duty it is to know and teach them.

Until, however, we have definitely ascertained the functions of the several organs concerned with the digestive process, the value of the several alimentary substances as nutritive agents, the circumstances which influence the course of the progressive and regressive metamorphosis of the tissues, together with several other points of minor importance, we cannot expect to establish many fixed rules for our guidance, still less to lay down the broad fundamental principles which govern this most important process of organic beings.

Much has been accomplished within the last decade, much is now being made clear to our minds, but still more remains to be performed. Experimental research, the chief means by which we are to succeed, must be more skilfully and carefully conducted than heretofore, and, above all, the number of earnest workers must be increased. The prize is worth all the efforts which centuries of time can produce, for, when we are able to propound the laws which govern the nutrition of the body, the other mysteries of organic life will not long remain unfolded.

This little book of Dr. Bennet's, though not a positive contribution to science, is yet, in many respects, a useful one, as exhibiting in a plain manner, and with tolerable correctness, the present condition of our knowledge of the nutritive processes, the derangements to which these processes are liable, with, in general, sound directions for the guidance of the appetite, and for the relief of the disorders consequent upon indiscretion or hereditary predisposition.

The first chapter treats of digestion and nutrition in health—of solid food and the actions of the several digestive secretions upon it—of the purposes which it subserves in the economy according as it is heat-producing or tissue-forming—and of the various kinds of liquid food, and of their elaboration and destination.

There is nothing in this chapter at all in advance of what is already known, and, upon the whole, it fails to exhibit a satisfactory view of our actual knowledge upon the subjects considered. The old division of food into respiratory or carbonaceous, and histogenetic or nitrogenous, is given without modification. Although in the main this division is convenient, and to a certain extent correct, it can no longer be regarded as rigidly existing. Experiments, both on the other and this side the Atlantic, have positively determined that life, with the normal amount of heat, can be sustained for a considerable period on food of the most ultra nitrogenous character. Dr. Bennet is, we think, disposed to over-estimate the importance of nitrogen as a tissue-forming substance. The statement is made that the framework of an animal is, to a great extent, composed of nitrogen, whereas, in those tissues of the most proteinaceous character, it does not exceed 16 per cent. of the dry substance; and in other tissues, as the bones for instance, it falls far below this ratio. Though essential to the composition of all the tissues it is certainly entitled to no pre-eminence over oxygen or carbon, or even over the purely inorganic elements of their substance.

In treating of the digestive fluids and their uses there are several misstatements which it is not proper to pass without notice. Thus, it is asserted that the saliva and pancreatic juice are identical in physical properties and chemical composition. In order that our readers may see for themselves how exact Dr. Bennet is in this statement, we subjoin the following tables of Bidder and

Schmidt,[1] showing the composition of these fluids, merely premising that the work from which they are taken was published at least six years before Dr. Bennet's, and is remarkable for the accuracy and extent of the investigations contained therein :—

SALIVA.		PANCREATIC JUICE.	
Water	995.16	Water	900.76
Organic matter . . .	1.34	Organic matter . . .	90.38
Sulpho-cyanide of potassium .	0.06	Chloride of sodium and other inorganic salts . . .	8.86
Epithelium	1.62		
Inorganic salts . . .	1.82		1000.00
	1000.00		

Certainly no two fluids, at all approaching each other in composition, could be much more dissimilar, and, we may add, that their physical characters are just as unlike.

No reference is made to the action of the intestinal juice in digestion, and there are one or two other points to which we might allude as not being correctly stated.

With the exceptions noticed, this chapter forms a very suitable introduction to the main topics of the volume.

In the second and third chapters nutrition is considered in a more general manner, and the nutritive requirements of man with reference to temperature, climate, and occupation pointed out. Nutrition as it is effected in the lower animals, and in plants, is also touched upon.

These chapters appear to have been written with a good deal of care, and, to a great extent, are free from the inaccuracies of the first chapter. The true value of the accessory aliments, tea, coffee, alcoholic liquors, spices, tobacco, &c., is recognized by Dr. Bennet, though the evils of their excessive use are not the less indicated.

The fourth chapter treats of defective nutrition, and contains a good deal of practical information well arranged, and communicated in an easy and agreeable manner. The divisions and subdivisions of this chapter are well conceived, but there is occasionally an assumption of theory for fact and a looseness of expression, which, in spite of the many good points contained in it, are calculated to put the reader in a bad humour with the author.

Thus, for instance, when speaking of the formation of an excessive amount of fat from over-feeding, constitutional predisposition, or defective nutritive power, Dr. Bennet says, the fat is first deposited between the muscular fibres, but, if the deposition be not checked, it breaks up the muscular fibres and takes its place, thus, as he says, giving rise to fatty degeneration. Now, we conceive this to be an inexact statement of the process by which the muscular fibre is *converted* into fat, which *conversion* alone constitutes true fatty degeneration. The difference between *fatty deposit* and *fatty degeneration* is so simple that we wonder Dr. Bennet should not have more plainly perceived and expressed it. We do not believe that the latter results from over-feeding, whilst there is little doubt that the ingestion of an excessive amount of fatty food, or of food capable of being converted into fat, will assuredly lead to fatty deposit. The true cause of the retrogression of myolin into fat, which action alone constitutes fatty degeneration, is deficient exercise. The muscles of a paralyzed limb will, after a short time, be found in this condition, and the difference in colour and consistency between the flesh of the breast and legs of the common fowl is mainly, if not entirely, owing to the fact, that the former is in a state of fatty degeneration produced by disuse.

Urate of ammonia is regarded by Dr. Bennet as being present in the urine in abnormal amount if deposited by a moderate reduction of temperature, and the uric acid is deemed to be in excess if in larger quantity than eight grains. As we know that these substances, together with almost every other constituent of

[1] Die Verdauungssæfte und der Stoffwechpel, pp. 10 and 245.

the urine, may, within the strict limits of health, undergo considerable variation in quantity through the operation of other factors than that of defective nutrition, we cannot consent to receive Dr. Bennet's opinions for facts.

The fifth chapter contains practical deductions from the facts and opinions previously stated, and the sixth and last relates to confirmed dyspepsia. The advice given to those labouring under this disease is almost invariably of a sound and practical character, and such, that if consistently followed out, can scarcely fail to relieve the most inveterate case.

In our notice of Dr. Bennet's little work we have mainly called attention to what we consider to be its faults; knowing full well that the good points and conservative doctrines, which are met with on every page, will require no notice from us to render them apparent to the reader. W. A. H.

ART. XXIII.—*Syllabus of the Course of Lectures on Medical Logic, delivered in Marischal College and University, Aberdeen.* By FRANCIS OGSTON, M. D., Professor of Logic and Medical Jurisprudence. Edinburgh, 1858. 12mo. pp. 45.

RECENTLY there was founded, by endowment, in the Marischal College of Aberdeen, Scotland, a new chair exclusively devoted to the subject of *medical logic*, to which chair Dr. Ogston has been called, who commenced his first course of lectures in the autumn of 1858.

Of the importance of medical logic to the physician there cannot be a question in the mind of any one who has paid any particular attention to the subject. In the application of the principles of a correct logic to the investigation of the functions of the animal organism, and the phenomena to which these give rise during a state of health or of disease; of the several causes by which these functions are liable to be disturbed, and the manner in which each acts in the production of those conditions to which the term disease has been applied; and of the means adapted to counteract the action of disturbing agencies upon the organs of the living organism, or, when disease has been already induced in the latter, the modes by which it can be best arrested or removed, so that the normal functions may be reinstated, we pursue the only course by which the facts, derived either from a course of experiments or culled at the bedside of our patients in the ordinary routine of professional practice, can be secured from error and rendered available for the instruction of the individual or for the enlargement of the general fund of medical knowledge open to the entire profession.

Mere experience—the simple observance of the phenomena of health and of disease, and the changes in the morbid conditions of the organs after the employment of certain remedies—though the favourite method with the so-called "practical physicians," is valueless without the employment of a correct logic in judging of the character and relations and bearings of the phenomena observed, the tracing these up as far as we are able with our limited knowledge of the nature and laws of vitality, and the mode in which this is modified by external or internal agencies; our experience furnishes us with no absolute, practical information, no knowledge capable of any wide and useful application, in our endeavours to know, distinguish, prevent, or cure diseases, but merely a chaotic mass of disconnected facts, which often appear to be opposed to, and irreconcilable with, each other. The limits of pure observation in medicine are soon reached, and it is only through a proper course of legitimate theorizing that principles in either physiology, etiology, pathology, or therapeutics can be arrived at, that the healing office can be raised from the humble position of a mere art to the standing of a true scientific profession.

The distrust of theory, properly so called, in medicine, which is so frequently expressed, is worse than absurd; it is positively injurious to the onward progress of our profession in the only legitimate road. The union of observation and of speculation is as indispensable to the acquisition of clear views of the nature of disease as it is to the establishment of a successful practice.

In the preparation of his course of lectures on medical logic, Dr. Ogston, find-

ing the only treatise of any note available for his purpose as a text-book to be that of Œsterlin, resolved, for the sake of his pupils, to observe the general arrangement of the author, as being in most respects unobjectionable. Beyond this, however, he found it impossible to confine himself within the limits to which Œsterlin restricts himself in his treatise. In the details of his subject he has availed himself of not only the works of the earlier writers on pure logic, together with such of our best medical authors as have touched incidentally on the science, but also, to a large extent, of the labours of contemporary logicians, amongst whom he would assign the highest place to John Stuart Mill, whose doctrines the lecturer has followed Œsterlin in endeavouring to apply to the particular questions and objects of medical science.

So far as we can judge of the character of the thirty-two lectures of which the course on medical logic of Professor Ogston is composed, by the syllabus before us, it would appear to be a comprehensive, well-arranged, and most instructive one. We trust that the time may not be far distant when there will be founded in the medical schools of the United States a similar chair to that filled by Professor Ogston, from which shall emanate annually an equally full and excellent course of instruction.

D. F. C.

ART. XXIV.—*Demonstrations of Diseases in the Chest, and their Physical Diagnosis.* By HORACE DOBBELL, M. D., Licentiate of the Royal College of Physicians, etc. etc., London: John Churchill, 1858, pp. 165.

WORKS on physical diagnosis have so multiplied of late, and are so often but copies of each other, that we confess to have taken up Dr. Dobbell's work without expecting to find it differing from any other manual on the subject. But a more careful examination convinced us of our error. The plan of the work is to teach the student to connect physical signs with their physical causes, and to enable him to do this the volume is illustrated by coloured drawings giving a faithful representation of the most common lesions. Their corresponding physical signs are placed alongside, and so arranged that the eye can traverse easily from one to the other. The first chapters treat of acoustics, and an attempt is made in them to explain the principles upon which the physical diagnosis of lesions within the chest is based. The production of sound, or rather its reinforcement by unison, resonance, by consonance, by echo, are illustrated by reference to the physical signs, and explained in connection with the doctrines of those authors who found theories of physical signs on them. Something more than understanding the acoustic conditions requisite to the existence of different sounds is, however, necessary. Sounds must be heard to be rightly appreciated or remembered. No description in books, or in the lecture-room will ever take the place of bedside instruction. The author is fully impressed with this. But he has produced a useful book in attempting by a series of plates to associate the conditions causing them with their existence.

The manner in which this is accomplished, is, on the whole, deserving of praise. We meet with nothing very original; the views of prominent authors and their classifications are adopted and explained; the book embraces only the most prominent of the diseases of the lung; but what is given is well arranged and well expressed. Yet while according this praise to the author, we find here and there statements and terms to which we cannot subscribe, and some of which seem to us more calculated to confuse than to enlighten. Such expressions as these "fine crepitation is distinguished from the smallest crepitation (noted in Pls. IV. and V. figs. 13, 16, 18) by its crackling character, whereas in both of these cases the crepitation is bubbling. It must be most scrupulously distinguished from the *small crepitation* of capillary bronchitis," are not conducive of conveying a clear idea to a student, who would not be very likely to see a marked distinction between a *fine* crepitation, and a *small* crepitation.

The following is worse than a fault in the use of terms, it is an error in fact: "In Plate I., fig. 1, the most tangible physical sign is *prolonged expiratory murmur;* but, as in Pl. VII. fig. 24, it accompanies cavities, it cannot be said to

specify consolidation; in Pl. IX. fig. 29, it accompanies inflamed bronchial lining, and hence it does not necessarily indicate cavity. But all three cases will be found to agree in one respect, viz., *that the exit of tidal air* from vesicular lung tissue is impeded." As if the exit of tidal air from vesicular lung structure were the cause of the distinct blowing expiration of cavernous respiration! The changed *rhythm* of the normal vesicular murmur, and the change of *quality* of sound, which determines bronchial or cavernous respiration, are all jumbled together in the most inextricable confusion. We notice also at several places in the book, a mistake which is very common and which has crept into almost all works on diseases of the chest. It is repeatedly stated that the vesicular murmur is weaker on the left than on the right side. This is not correct. The vesicular inspiratory murmur is in the large majority of cases far more distinct on the left side. But there is more expiration at the upper portion of the right lung; hence the error.

There are remarks scattered throughout the volume, to which we turn with more pleasure. The absence of reliable signs of the earliest stage of tubercular deposit is forcibly impressed upon the young practitioner. The importance of teaching the patient how to breathe, and of not attaching to much weight to the prolongation of the expiratory murmur, unless the breathing be regular, is a point of practical value which is well enforced. The author also gives the results of some experiments which may serve to illustrate the difference between *tympanitic* and *amphoric* resonance on percussion. "Tympanitic resonance requires that the cavity percussed shall be full of air, but shall not communicate freely with external air. Amphoric resonance requires that the cavity percussed shall communicate freely with external air." This he demonstrates by sealing up the small hole in the vulcanized rubber balls used as toys, it will then yield a tympanitic resonance. Unseal the hole, and the resonance will still be imperfectly tympanitic. Cut the hole large enough to admit of free communication with the external air and to prevent the hissing produced by the escaping air, and percussion will elicit amphoric resonance. Several other experiments with reference to the varieties of percussion sound are spoken of, and, as they serve to explain and to make the student familiar with the causes of sounds, add to the usefulness of this little volume. J. DA C.

ART. XXV.—*The Hygiène of the Turkish Army.* By J. N. RADCLIFFE, M. R. C. S. Eng., late of the Staff of H. H. Omar Pasha. Reprinted, with additions, from the Sanitary Review. 8vo. pp. 60. London, 1858.

THE details presented by Dr. Radcliffe in respect to the particular hygienic condition of the Turkish army, and the influence exercised by it upon the health and efficiency of the men, are certainly most interesting, and furnish valuable hints to those upon whom the duty of arranging and carrying into effect the details of military hygiène devolves. It contains, however, few general principles that are not perfectly familiar to all conversant with the sanitary police of armies and encampments, and scarcely a single fact that had not already been verified by the experience of military medical officers.

What strikes us as most remarkable in reference to the hygiène of the Turkish army is, the extreme neglect of the soldiers to cleanliness of person and clothing; the filthiness of their habits, the polluted condition of the outskirts of their camp, and their entire indifference to preserve from impurity the sources from whence they derive the water for drinking and culinary purposes. The Turkish soldier may certainly perform with scrupulous regularity the daily ablutions prescribed by his religion; but these ablutions, as ordinarily practised, are not such as to insure cleanliness.

All this is truly surprising when related of men whose religion, as well by its precepts as in its ceremonial observances, inculcates so forcibly and constantly the duty of personal and domestic purity, and the defilement that ensues upon contact with every species of uncleanness. D. F. C.

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Physiology of Digestion and Nutrition.*—Busch furnishes (*Virchow's Archiv*, vol. xiv., 1858) valuable information on the physiology of digestion and nutrition in general, derived from observations and experiments made on a female patient, aged thirty-one, in whom, through external violence, the intestinal tract was divided into two separate portions—the superior consisting of the stomach, duodenum, and a small part of the jejunum—the inferior of the larger part of the jejunum and the whole of the ileum and colon. The author had therefore the rare opportunity of observing the phenomena of a fistula of a jejunum in an otherwise healthy human subject. The accident had taken place six weeks before the admission of the patient into the University Hospital at Bonn; the wound in the abdominal walls was healed, with the exception of the fistulous opening. The woman had a voracious appetite, and devoured large quantities of food; the greatest part of this, mixed with the gastric, pancreatic, and intestinal secretions and bile, passed away from the fistulous opening in the jejunum; no particle of it entered the contracted and too distant aperture of the inferior portion of the intestinal tube. Extreme emaciation, loss of strength, tendency to sleep, and hoarseness, were amongst the principal constitutional phenomena.

The plan pursued by Busch, in order to restore the strength of the patient, consisted in the introduction of strong broths with eggs beaten up in them, occasionally also of pieces of boiled eggs and meat, into the inferior portion of the digestive tube. The strength of the patient increased rapidly under this treatment, and she gained also considerably in weight. This fact is of great interest, as it corroborates the view, that nutrition can take place—for some time, at all events—without the admixture of the gastric, pancreatic, duodenal, and hepatic secretions to the food. One might feel inclined to draw the further inference, that a complete fistula situated in the upper part of the small intestines renders the nutrition of the body through the stomach impossible; but this inference is made improbable by the circumstance that the ingestion of food through the mouth alone was sufficient to keep up and increase the strength of the patient after the recovery had reached a certain stage under the plan above described.

Although our space is limited, we cannot refrain from giving some of the principal observations made by the author, referring for the details to the essay itself. 1. There are two distinct sensations of hunger; the one is caused by the nervous system, in general perceiving the want of fresh supply for the exhausted tissue; the other is produced by the nerves of the digestive organs alone. The former of these may continue, even when the digestive organs are filled with food. 2. The peristaltic motion of the intestines is not continuous, but shows periods of rest and of increased action; there is, however, no regularity in the

alternation of rest and action. The force of the peristaltic motion could not be ascertained with precision, but it was sufficient to overcome a column of water two feet high. In the lower portion of the digestive tube, distinct antiperistaltic motion was frequently manifested. 3. The quantity of the intestinal juice (*succus entericus*) is very small and constantly alkaline. It will be remembered that this observation is in opposition to that of Frerichs, but in corroboration of Bidder and Schmidt's results. The percentage of solids varied between 3.87 and 7.4 per cent., which is considerably greater than that stated by the authors just mentioned. 4. There can be no doubt that the intestinal juice exercises a digestive influence on proteinaceous substances. This process, however, is accompanied by that of putrefaction. 5. The intestinal juice transforms starch into grape-sugar. 6. It does not transform cane-sugar into grape-sugar. 7. The cane-sugar, absorbed as such, does not reappear in the urine. 8. Without the influence of bile or pancreatic juice, there is either no absorption of fat or at all events it takes place only to a very limited amount. 9. The reaction of the mixture of digestive secretions passing from the upper portion of the tube during the state of fasting was almost always neutral, only in rare instances slightly acid or alkaline. 10. This mixture of fluids did never exhibit the reaction of saliva. We may therefore conclude that the saliva is absorbed before the mixture reaches the jejunum. 11. The average percentage contained in these fluids was 2.48. 12. The first portions of the food introduced into the stomach appeared in the jejunum from between fifteen to thirty minutes after the commencement of eating. 13. Solutions of cane-sugar disappear to the greater part already in the beginning of the digestive canal; what reaches the jejunum is transformed into grape-sugar. 14. Raw albumen of eggs is likewise partly absorbed already in the stomach and adjacent part of the digestive tube; the portion which enters the jejunum is unchanged. 15. Gum passes unchanged into the small intestines. 16. Gelatine becomes dissolved, and does not coagulate again; the greater part of it is absorbed. 17. Part of the casein contained in the milk reaches the jejunum in the uncoagulated state. 18. The mixture of the digestive fluids contained in the duodenum emulsifies fatty substances completely, if its reaction is alkaline, but less completely if it is acid. 19. This mixture of fluids exercises likewise a digestive influence on proteinaceous substances. 20. The lowest quantity of digestive fluids entering the jejunum within twenty-four hours amounts to more than one-seventeenth of the weight of the body.—*Brit. and For. Med. Chirurg. Rev.*, Jan. 1859.

---

2. *On the Influence of Heat and Electricity on the Spinal Cord.* By DR. F. KUNDE.—1. Two normal frogs being placed in water, the one at the temperature of 1° C. and the other at 31° C., the respiratory movements and the pulsations of the heart abate in frequency in the one kept cool, while they increase in the other.

2. The heart's pulsations of a frog kept at 1° C. average 20–24 per minute; at 31° C. they average 60–64.

3. A frog may remain for twenty-four hours at a temperature of 1° C. without dying; the muscular movements become at such a temperature slower and less intensive.

4. A frog that has spent some time at a temperature of 34° C. loses both voluntary and reflex movements. Blood and lymph hearts continue, however, to pulsate. Should, however, this temperature be kept up for a considerable time, the animal dies without the occurrence of cadaveric rigidity.

5. If a frog be for some time exposed to the influence of an interrupted current of electricity, so that tetanus has primarily occurred, after a time, when examined after cessation of the current, it is found to have lost both voluntary and reflex motion, the blood-heart still beating forcibly. In a short time, such a frog recovers perfectly.

6. An elevated temperature and electricity remove the tetanus induced by strychnine.

7. A frog tetanized by a definite dose of strychnine loses its tetanus at a definite temperature, and is completely restored in a short time by a proper regulation of the temperature.

8. A frog which has received a certain quantity of strychnine becomes tetanic at 31° C., but not at 16° C. Even so a frog may become tetanic at 16° C., though it was not so at 1° C.

9. The administration of strychnine to frogs may be so regulated that they may remain unaffected at any definite temperature, and yet become immediately tetanic on a proper modification thereof.

10. A frog rendered tetanic at any temperature may be maintained in this state for fourteen days (and probably longer), by being kept at a temperature of 1° C. or laid on ice.

11. A frog which has lain several days on ice, tetanic from strychnine, loses this condition in a very short time by the application of warmth (as by holding in the hand).

12. A frog which has almost ceased to be tetanic at any definite temperature (as at 15° C.) has the tetanus immediately reproduced by being laid on ice or placed in a temperature of 1° C.

13. If a frog, tetanized by strychnine, be exposed to a current of interrupted electricity sufficient to produce tetanus in a normal frog, it speedily loses the strychnine tetanus both by the ascending and descending current.

14. A frog tetanized by strychnine may, for eight hours, be exposed to the most powerful action of two Daniel's batteries; nevertheless the tetanus recurs a short time after cessation of the current, while mechanical and chemical irritants are unable to produce reflex motions, though electricity can, immediately after removal of the wires, produce convulsive movements. (All these experiments must be made on newly caught frogs, and they must be reckoned not by the dozen but by the hundred.)

15. If two cats, from the same litter, get the same dose of strychnine, and both become tetanic, and the one then placed in a temperature of from 16°–19° C., and the other at 40°–45° C., that cat condemned to the low temperature speedily dies, the other is rapidly restored to its *status normalis.*—*Ed. Med., Journ.*, Jan. 1859, from *Verhand d. Phys. Med. Gesellschft. in Wurzburg.*

—

3. *Sarcina Ventriculi.*—Dr. Hermann Itzigsohn directs attention to the fact that this, in common with all phycochromatous so called unicellular algæ, is neither a true species nor genus, but only a stage in the development of some polycellular filamentous alga, probably an oscillatoria; that the sarcinæ are, in fact, the free ripe gonidia or spores of some such alga. Their independent growth is no barrier to this view, as they have that in common with many other spores, as those of various lichens, which often form large pulverulent masses on stones, wood, etc., and also with those of many other algæ. He adds, also, that these gonidia are so minute as to be easily taken up by the absorbents, and carried by the bloodvessels to the bladder, bronchi, etc.; in a dry state, they may be even inhaled with the air, and subsequently grow.—*Edinburgh Med.-Journ.*, Jan. 1859, from *Allg. Wien. Ztwg.*

MATERIA MEDICA AND PHARMACY.

4. *Action of Carduus Mariæ, C. Benedictus, and Onopordum Acanthium.*—After a long and learned historical introduction, Dr. Lobach proceeds to state, that to Rademacher is due the credit of having rescued the Card. Mar. from oblivion, and given it a place in the materia medica as a remedy for obstinate hemorrhages. R. found it, as a decoction of the seeds, ℥j to ℥viij, dose ℥ss omni horâ, of great use in those hemorrhages depending on diseased liver or spleen (hæmatemesis, melæna, nasal and uterine hemorrhages); it also regulates the bowels, and is diuretic. L. has employed this remedy in fourteen cases of uterine hemorrhage; in three of chronic cough, accompanied by irregular and deficient menstruation and by occasional hæmoptysis; in two cases of abortion in the third and sixth month, in which the bloody discharge, after the lapse of

some weeks, had not ceased; and in one abortion in the second month, to check the gushing hemorrhage and promote a more regular flow. L. considers that there is no other remedy in the materia medica of equal value in the treatment of chronic uterine hemorrhage and melæna, inasmuch as it not only checks the immediate flow, but, by continued use, removes the cause on which it depends, regulating and restoring the natural portal circulation, and, where amenorrhœa depends on such irregularity, it tends to restore the normal flow. The other two thistles, C. Benedict. and Onopordum Acanth., have similar action. A tincture of the seeds is recommended as the best preparation.—*Ed. Med. Jl.*, Jan. 1859, from *Verhand. de Phys. de Gesell. in Wurzburg.*

5. *Physiological Properties of Xyloids.* By J. BAKER EDWARDS, Ph. D. &c.—These "Substitution Compounds," containing nitrous acid, derived chiefly from the starch series, possess considerable interest from their physical properties. They are formed from these neutral, non-azotized vegetable compounds by the action of nitric acid, which removes more or less of hydrogen, and supplies $N O_4$ (nitrous acid) to the same extent, thus making up the original type. The first of these, formed from starch, C 24, H 20, O 20, takes up one equivalent of $N O_4$ in place of hydrogen and the xyloidine thus produced is the type of the series, and consists of C 24, H 19, $(N O_4)$, O 20. By the same action upon lignine or cotton, we obtain two compounds, both "gun cottons," viz.—C 24, H 17, $(3 N O_4)$ O 20, and C 24, H 15, $(5 N O_4)$ O 20, the first being soluble in alcohol and ether, forming collodion; the latter, very slightly soluble in the same mixture, and forming the most violently explosive gun cotton. From sugar we obtain a resinoid substance, containing C 24, H 25, $(3 N O_4)$, O 82 of a bitter taste, and highly explosive character. From glycerine, we obtain an oily fluid, insoluble in water, soluble in alcohol and ether, having a sp. gr. of 1.5. It contains C 6, H 6, $(2 N O_4)$ O 6. Again, from Benzene (a pure hydro-carbon), C 12, H 6, we obtain by a similar process, nitrobenzene, containing C 12, H 5, $(N O_4)$ a remarkable aromatic oil, closely resembling oil of bitter almonds, and used extensively in perfumery, as a substitute for this scent. With these several substances I have largely experimented upon animals, with a view of ascertaining the physiological effect of the group. The result is, that all appear to possess more or less the peculiar action upon the nervous system, characteristic of strychnine; and I believe, that further experiments upon man, would prove that they possess peculiar and valuable medicinal properties. Physically, they are allied, being all highly explosive bodies, deflagrating at a low temperature, or by concussion; and physiologically they all produce a powerful effect upon the heart's action, trismus, and a series of tetanic convulsion, terminating in death.

I have a few remarks to make upon each of these substances, which I thus distinguish—

1. Xyloidine	C 24, H 19 $(N O_4)$ O 20.
2. Pyroxiline	{ *a* C 24, H 17 $(3 N O_4)$ O 20. { *b* C 24, H 15 $(5 N O_4)$ O 20.
3. Saccharoine	C 24, H 25 $(3 N O_4)$ O 28.
4. Glonoine or Nitroglycerine . . .	C 6, H 6 $(2 N O_4)$ O 6.
5. Benzoine or Nitro-benzene . . .	C 12, H 5 $(N O_4)$.

With respect to the first two compounds, although in more than one instance slight convulsions followed their administration, yet the general symptoms were not very marked, probably owing to their insolubility in watery fluids they are not taken up to any extent by the stomach when exhibited in a dry state. The ethereal and alcoholic solutions are also unfavourable for the development of their properties, inasmuch as these fluids appear to act specifically as antidotes even to the more active of these substances, and therefore when administered with them, veil their action to a great extent.

A quantity considerably under a grain of saccharoine was given to a mouse, and the effect in this instance may serve as a general type of the results of other experiments upon the whole of this class of bodies.

In five minutes the mouse appeared wild and uneasy, ran quickly about under the large bell jar in which it was confined, and seemed anxious to escape; the

fur became raised, in ten minutes it began to scratch its jaw, as if uneasy about the mouth, the teeth chattered involuntarily, and once or twice the jaw was held firmly for a moment either when shut or open. The animal started violently at sudden noises, and in twenty minutes it began to fall forward when advancing, and soon after showed symptoms of partial paralysis, as its head was stiffly held in one position with a side twist, and when attempting to advance it made a circular motion and fell on the twisted side; in half an hour it began to have recurring spasms, which threw it on its side; the feet and forepaws being held firmly contracted. On recovering, it appeared easy, and breathed freely, but was stupefied and very reluctant to move. After a few moments, another spasm seized it as before, and held it for about one minute in a paroxysm. These were repeated until the animal died from exhaustion.

The most powerful of these is No. 4, nitro-glycerine, and this substance has two distinct physiological actions, which are modified by the dose and the duration of its action. At first the animal is excited and lively, the pupils of the eye are dilated, the heart's action accelerated and irregular, the breathing rapid and labored, the animal staggers in walking, and appears intoxicated. This effect goes off in about half an hour, when it eats and appears to recover. If the dose has been small, no further symptoms are observed; but when (in the case of a full-grown rabbit), the dose has been about twenty drops, or when four drops were injected into the jugular vein, the first symptoms having passed off; in the course of two hours, a chain of nervous symptoms sets in, resembling in a remarkable degree that produced by strychnine, every distinct stage being greatly prolonged, and after chattering and fixing of the jaw, and tetanic convulsions affecting violently the whole frame, the animal at last becomes exhausted and stupefied; the pupils contract, the breathing becomes laboured, and gradually the heart ceases to beat. The convulsions last from one to four hours, and sometimes the animal dies during a paroxysm.

The powerful action of minute doses of glonoine upon the human system I have experienced and repeatedly witnessed, and I am disposed to conclude that the physiological action of minute doses is different in kind to that of larger doses, and that in the latter case we by no means obtain the primary effect in an exalted degree, but a new kind of action altogether. The last-named substance nitro-benzene, produced death in a mouse, in a dose of 4 drops, the symptoms being less marked than in the other cases, and death resulted from a single convulsion; this substance, however, did not produce death in a rabbit, in a dose of 30 drops; it is therefore less energetic than glonoine.

It will be observed, that these symptoms, produced by glonoine especially, closely resemble the effects of strychnine, but the action is more steady, and accompanied with less distressing fear and trembling, and in addition exhibiting a narcotic action. We must therefore infer, that strychnine is not the only substance that is capable of producing a peculiar chain of tetanic symptoms, terminating in death. I also beg to suggest, that the saccharoine, and glonoine more especially, appear to be possessed of properties which promise to be of even more value than strychnine, while at the same time they are less violent in their action, and I would strongly recommend a trial of their effects, in cases of epilepsy and paralysis, &c.—*Liverpool Medico-Chirurgical Journal*, Jan. 1859.

---

6. *Method of making the Mercurial Cigarettes.*—Dr. Nevins gives the following directions for preparing these cigarettes: A little practice, he says, is requisite for skill in making them; but the following directions will obviate the difficulties generally experienced on the first attempt—

Take of nitrate of mercury	15 grains,
Acid nitric: fort.	15 "
Aquæ destillatæ	6 drms: vel. q. s.

Mix the acid and water, and dissolve the nitrate of mercury by the aid of a gentle heat, which may be obtained on the top of an ordinary oven. Then soak in the solution a piece of thick white blotting paper, six inches by eight, and dry it. Before it is quite dry, cut it into eight slips, and roll each of these round a thin pencil, so as to make a small paper tube. To prevent this from unrolling, the

free edge should be gummed. The cigarette is now complete, and when dry, will burn like touch-paper when smoked. The interior may be stuffed with tobacco if desired, or the paper itself may be rolled into a cigar, along with tobacco in the first instance; but it ought always to be rolled before being quite dry, as it is liable to become brittle when perfectly dry, and to crack in the operation of folding. It sometimes happens, that the nitrate of mercury does not become perfectly dissolved, even by the aid of the gentle heat, in which case the mixture should be stirred up previous to the paper being immersed in it, and a slight degree of agitation of the liquid will diffuse the undissolved nitrate uniformly over the paper.

It is evident that other agents than nitrate of mercury might be employed in this way. Nitrate of potash, in the form of common touch-paper, would yield nitrous acid, which might be of service in a languid ulceration about the throat. Creasote and various pyrogenic compounds may be applied directly to the bronchial membrane, by smoking brown paper of a tarry composition; and benzoic acid might be introduced in a similar manner, by soaking the white paper in a very weak solution of saltpetre, to render it sufficiently combustible, and then adding a solution of benzoin or of benzoic acid, before rolling the slips into cigars; but the principle being once understood, the particular drugs to be adopted, and the cases in which they are to be applied, will suggest themselves to the mind of the medical man as the necessary occasions arise.—*Liverpool Med. Chirurg. Journ.*, Jan. 1859.

—

7. *Pagliari's Hæmostatic.*—The following formula has been given for the preparation of this article: Eight ounces of tincture of benzoin, one pound of alum, and ten pounds of water, are boiled together for six hours in a glazed earthen vessel, the vaporized water being constantly replaced by hot water, so as not to interrupt the ebullition, and the resinous mass kept stirred round. The fluid is then filtered, and kept in stoppered bottles. It is limpid, slightly styptic in taste, aromatic in odour, and the colour of champagne. M. Hepp, of Strasburg, has substituted white resin for the benzoin. Every drop of this fluid poured into a glass containing human blood produces an instantaneous magma; and by increasing the proportion of the styptic to the quantity of the blood, a dense, homogeneous, blackish mass results.

—

8. *Voltaic Narcotism.*—Dr. B. W. RICHARDSON, Professor of Physiology at the Grosvenor School of Medicine, has, by using electricity combined with a narcotic, succeeded in inducing local anæsthesia. He applies a narcotic solution, consisting of equal parts of chloroform and tincture of aconite, to the part in which he desires to produce anæsthesia; then covers this part with a plate connected with the positive pole of the voltaic battery, and applies the negative pole to an adjoining part. Dr. R. in this mode produced anæsthesia in a nævus on the back of an infant, when Dr. Halford transfixed and tied a ligature around the nævus without the infant giving any indication of suffering pain by the operation.

—

9. *Croton Oil as an Epispastic.*—Dr. VON BASTELAER recommends the following pomade as a very useful substitute for cantharides in cases where the influence of the latter on the urinary organs is feared: Take of fresh lard 22 parts, white wax 2 parts, croton oil 6 parts, by weight. Melt the wax and lard by a gentle heat, and rub up in a heated mortar until the mass becomes cool, and then mix in the oil intimately.

—

10. *Hæmostatic Properties of the Perchloride of Iron.*—The solution of this persalt is now almost universally employed to arrest arterial or venous hemorrhage, resulting either from accident or as a consequence of surgical operations. It has also been found useful in intestinal hemorrhage; in one case in particular, M. Demarquay, of Paris, administered, morning and evening, enemata of seven ounces of fluid, with twenty drops of the concentrated solution of perchloride of iron, and a tablespoonful of the perchloride syrup (five or six drops to the tablespoonful), where the hemorrhage from the bowels was considerable, and had re-

sisted the ordinary remedies. The result was extremely satisfactory. The same surgeon relates a second case of extensive abscess of the shoulder, where an injection of iodine caused severe hemorrhage. This was arrested by throwing into the sac a lotion composed of seven ounces of water and ten drops of the perchloride.

In gonorrhœa and leucorrhœa, injections of the perchloride have been tried with success in weak and lymphatic subjects, the proportion of the perchloride being twenty drops to three ounces and a half of water.

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

11. *Hydrochlorate of Ammonia in Neuralgia.*—Mr. H. C. Brenchley, Surgeon to the Brighton Dispensary, relates (*Lancet*, Oct. 16, 1858) the following case to illustrate the efficacy of hydrochlorate of ammonia in neuralgia.

A young man, aged 23, unmarried, healthy, and without any other apparent complaint, had long suffered from very severe attacks of neuralgia of the face, coming on at intervals of about one month, and lasting from two or three days to a week. It sometimes came on on one side of the face, and at other times on the other side. During one of these attacks I saw him, and ordered him quinine and arsenic, which put an end to the attack for the time. After the lapse of a month or six weeks, he had a second attack, which was cured in the same way. A third attack, however, came on after a shorter interval. This time the quinine and arsenic failed to relieve him. On the third day, when I saw him, he was in great agony, propped up in bed, and unable to do anything from the severity of the pain. The left side of his face was swollen, flushed, and hot, the temperature considerably higher than on the right side; the heat, also, of the inside of the mouth was so great that I expected I should find matter forming from decayed teeth; but, on examination, I failed to do so.

I now tried the much-vaunted remedy—the valerianate of ammonia, but without any effect. The usual remedies having failed, I gave him the hydrochlorate of ammonia, in doses of half a drachm every hour, in camphor mixture. I saw him three hours after he had commenced this treatment, and found he had been much relieved after taking the second dose; and, having taken the third dose, he was almost free from pain, and begged to be allowed to continue the remedy. The heat and flushing of the face had subsided, and the temperature of the mouth considerably reduced, feeling quite cool after the burning heat of its former state. He went on for three or four days with the remedy, in doses of fifteen grains, three times a day, although there was no return of pain. Three months have now elapsed, and he has had no relapse.

The *modus operandi* of this medicine is not very clear; but whatever other specific virtues it possesses for the cure of neuralgia, in this particular case it evidently acted as an indirect sedative by lessening the arterial action; for the first and most striking effect of the medicine was the rapid lowering of the temperature of the mouth and face. From further observation, I have found that this remedy is most useful in those cases of neuralgia which are attended with heat and swelling.

---

12. *Administration of Medicines in a State of Vapour.*—The treatment of the diseases of certain parts of the body sometimes presents difficulties from the difficulty of applying topical remedies to them. Such are the rima glottidis the mucous membrane lining the bronchial tubes; the Eustachian tube; the membrane lining the frontal sinuses, and the antrum maxillare. Dr. Nevins in a paper recently read before the Liverpool Medical Society, states that he has beneficially applied medicinal agents to these parts, in the state of vapour; and he relates the following cures illustrative of this principle:—

Rima Glottidis.—A healthy young woman came under my care with *complete*

loss of voice, which had continued for nearly twelve months. She attributed it to frequent colds, taken in answering the front door, which opened towards the east. She had, at first, been treated by a medical man of celebrity and skill, and all acute symptoms had long disappeared, and the loss of voice was all that remained—but she could barely speak above a whisper. Iodine and other remedies had been employed without avail, and the patient for many months had used no means at all for the restoration of her voice.

It appeared to me, that the aphonia was probably due to chronic thickening of the chordæ vocales, and that if local stimulants and some mild mercurial could be applied, benefit might be anticipated. I therefore availed myself of a method for attaining this object, with which I had become casually acquainted whilst translating Trousseau's work on the "Art of Prescribing."[1] He there describes some "mercurial cigarettes," which appeared exactly calculated to accomplish the object in view. I therefore directed the patient to smoke one of these cigarettes twice a day, and instructed her, instead of blowing the smoke at once from her mouth, to breathe gently inwards, so that it might pass through her windpipe once in breathing it in, and a second time in breathing it out again. At first, the smoke occasioned a slight disposition to cough, but the larynx soon became accustomed to the stimulant, and in a day or two she smoked them without difficulty. In a short time improvement was evident, and in about a month her voice was restored nearly to its natural power, and it continued healthy to the time when I lost sight of her, which was several months after her recovery.

I have had one or two similar cases in which the like benefit has been derived; and I conceive, that chronic ulceration of the larynx or vocal organs would be advantageously treated in a similar manner, though I am not able to speak with equal confidence on this point, not having had the opportunity of submitting the plan to the test of experience.

FRONTAL SINUSES.—A middle-aged gentleman had suffered for many months from pain in the frontal sinuses, and a very offensive discharge in the nose, which destroyed his comfort, by the odour constantly rendering his food unpalatable, and exciting notice, as he fancied, when he was in company. He had used lotions and injections into the nose without avail, previous to consulting me. I directed him to use the same cigarettes, but instead of inhaling the smoke, to force it into his nose when closed by the fingers, and in the course of three or four weeks the discharge and pain had ceased, and he discontinued their employment.

NASAL POLYPUS.—A gentleman who had suffered from this disease for some time, and had had one polypus removed in London, and another by myself, was recommended to make trial of the cigarettes when he felt the early symptoms of the returning disease. He used them occasionally in their simple condition, blowing the smoke through his nostrils instead of direct from his mouth, and the symptoms disappeared, and the nose returned to its open state. He is an habitual smoker, and has latterly had tobacco made into cigarettes, by being rolled up in paper prepared with the mercurial solution. He has not required any further operation for some time, as he resorts to this remedy when his nose becomes uneasy, and it has hitherto been successful in restoring him to comfort.

EUSTACHIAN TUBE.—A patient suffered from deafness, which was not due to obstruction of the outer ear by wax, nor was there any evidence of inflammatory action to account for it. He had not recently laboured under cold, and the condition of the throat was not sufficiently disordered to explain the loss of hearing. He stated, however, that on one occasion he was sneezing, and for a moment, he regained his hearing distinctly, but lost it again almost immediately. This circumstance appeared to give the clue to the nature of his disease, which probably arose from an obstructed Eustachian tube. The difficulty and uncertainty of passing the Eustachian bougie are so great, that I preferred having recourse to the remedial effects of the stimulating vapour, and accordingly directed the patient to smoke the cigarettes; but in this instance the instruction was given to *swallow* the smoke, and endeavor at the same time to make the ears

[1] This translation with notes has been published by Baillière, Regent Street, London, under the title of "The Prescriber's Complete Hand Book. 24mo. 1852."

crack. In his early attempts he did not always succeed, but he soon acquired sufficient skill to force the smoke into both ears until he felt them distended, and his deafness was cured after using the cigarettes about a fortnight. A case is now under treatment in the same way, in which the patient has been deaf for above seven years, and the improvement is slow. He has been using the cigarettes for about six weeks, and even now it is too early to pronounce the case a successful one; but his hearing is improving, whilst all previous treatment had been entirely without benefit.

General Lining Membrane of the Bronchial Tubes.—The method of applying astringents and opiates to the surface of the bronchial membrane, by inhaling very finely powdered alum and opium, was lately brought before the Society by Mr. Bickerton, who exhibited his ingenious contrivance for effecting this object, and mentioned cases illustrative of its benefit. The method was the same in principle as that illustrated in the foregoing remarks; and although the title of this paper, "On the Internal Employment of Medicines in a State of *Vapour*," will not apply perfectly to their employment in the state merely of very fine powder, yet the beneficial results in his cases were so directly traceable to the topical application of the remedies, by means of the respiration, that I shall be pardoned for adducing his results in support of the method now under our notice.

In Mr. Bickerton's cases, his object was to apply a local astringent for the purpose of checking profuse secretion from the bronchial membrane, and the result corresponded with his expectations, and the cough and expectoration were essentially diminished. With a design in some respects similar, I have employed the mercurial cigarettes for the purpose of acting upon the whole bronchial membrane, in a case of long-standing spasmodic asthma. In this case, the occurrence of damp weather was almost always productive of an attack, and it seemed probable, that if the irritability of the bronchial surface could be diminished, the attacks might be reduced in frequency; the patient was, therefore, desired to smoke the cigarettes, which she learned to make for herself, and they proved so far successful, that when she felt an attack of difficult breathing coming on, she had recourse to them, and on several occasions the threatening symptoms went off, and no attack of spasmodic asthma was experienced. I do not, however, venture to lay too much stress upon this case, as she has had some severe attacks, notwithstanding the smoking, and because other means of a general tonic character, such as bathing and exercise were employed at the same time. Notwithstanding all reasonable deductions, on these grounds I am still persuaded, that the remedy has been of service in lessening the irritability of the bronchial membrane.—*Liverpool Med.-Chirurg. Journ.*, Jan. 1859.

[The method of making the mercurial cigarettes will be found described in the department of Materia Medica and Pharmacy, in the present No., p. 539.]

13. *Inhalation of Carbonic Acid in Granular Pharyngitis.* By Dr. Willemin.—The therapeutical application of the inhalation of carbonic acid has been made only in late years and principally in Germany. Bischoff and Ennemoser have made some experiments with carbonic acid, and have come to the conclusion, that when the gas is not breathed pure, nor for too long a time, it produces no unpleasant effects; but, on the contrary, that the respiration of the patients becomes more easy, and the expectoration more abundant. Germany possesses, in the present day, a great number of establishments where the inhalation of carbonic acid, more or less mixed with air or steam, is methodically practised. The gas is collected by means of an apparatus to which a caoutchouc tube is adapted, permitting the gas to be directed into the interior of the mouth, on the neck, or on any other part. At Pyrmont, a bell-glass has been placed over the spring from which the gas is disengaged, and three tubes carry away the carbonic acid. At Franzensbad a large basin has been constructed, and the patients descend into it by several steps, at the bottom of which the gas is disengaged. The superior stratum of air contains fifteen per cent. of carbonic acid; and in proportion as the patients are accustomed to this atmosphere, they approach nearer to the orifice from which the gas escapes.

The principal effect of the use of this gas, according to the German physi-

cians, is to increase the activity of the circulation, and to depress the functions of the nervous system. The indications for this mode of treatment are thus drawn up by Lersch; it is especially serviceable in cases of dyspnœa dependent on the accumulation of mucous secretion in the pulmonary vesicles, or on emphysema of the lung. Helfft considers that this gas exercises a stimulant action upon the respiratory tract, and he recommends its use in chronic inflammation of the larynx and of the pharynx, in bronchial catarrh, and humid asthma. M. Goin recommends its use in nervous affections of the respiratory passages, as in asthma, and also in intermittent fever. The contra-indications of this inhalation are said to exist whenever any affection of the respiratory passages is accompanied by excitement of the circulating system. The German physicians unanimously forbid this treatment in phthisical cases. According to Gräfe, it is absolutely injurious when cavities are formed, these being often surrounded by a zone of inflammation. Under the influence of the carbonic acid inhalations the expectoration is diminished, and the fetor of the secretions is corrected, but the inflammation of the pulmonary parenchyma is augmented. Its use must also be avoided in hæmoptysis.

Dr. Willemin draws the following conclusions upon the inhalation of carbonic acid—namely, that when mixed with air, this gas produces a more or less active excitement of the respiratory passages, the action being analogous to that of the same gas upon the skin, the eye, &c., and this effect ought to contra-indicate its use whenever there exists a disposition to acute inflammation.

That the excitement is followed by a sedative effect, which appears to depend on a special action of this gas on the nervous system, the respiration becomes easier, the cough is allayed, the circulation is retarded, and the redness of chronic inflammation diminishes.

That continued for a longer time, or made with a larger proportion of gas, these inhalations cause vertigo, relaxation of the limbs, and anæsthesia.

That, in addition to this general action, the gas possesses an anæsthetic power over wounds and parts denuded of epidermis.

That these inhalations are especially efficacious in chronic inflammations with atony of the mucous membrane and exaggerated secretion, and in nervous affections of the respiratory passages; but that they ought to be avoided in phthisical cases.—*Brit. and For. Med.-Chirurg. Rev.*, Jan. 1859, from *L'Union Médicale*, July 15, 1858.

---

14. *Instillations of a Tepid and rather Concentrated Solution of Chlorate of Soda into the Trachea of Children affected with Croup.*—M. BARTHEZ has been trying local applications to the false membranes produced in croup. For about two months, an epidemic of croup had prevailed near the Hôpital Ste. Eugénie, and had assumed some peculiar characters, being attended with the production of a false membrane in the bronchi, trachea, and larynx, seldom in the pharynx, and hardly ever in the nasal fossæ. The general symptoms of blood-poisoning were generally absent, and after tracheotomy, the children died with the symptoms of slow asphyxia; they all died, and in the greater part of them, the trachea and the bronchi were filled with false membranes.

M. Barthez had previously made some experiments on the comparative effects of chlorate of soda and chlorate of potash, when these salts are applied to the false membranes. Two portions of false membrane, of nearly equal dimensions, were placed in contact respectively with a concentrated solution of chlorate of potash, and a concentrated solution of chlorate of soda. The false membranes were gradually altered in character; they softened and lost their opacity; their tissue became less compact, more transparent, and afterwards diffluent, and their membranous form disappeared without losing all its cohesiveness. The only difference observable in the two solutions was that the changes began later in the chlorate of potash than in the chlorate of soda, and required a much longer time for their completion. The same membrane immersed in water only, preserved its natural appearance for many days.

Guided by these experiments, M. Barthez instilled through the canula a tepid solution of chlorate of soda in some cases of tracheotomy, in the hope that he might thus effect the softening of the false membranes, and consequently the

more easy destruction of their adhesions, and their more rapid and complete expulsion. The results of these experiments were very encouraging, for all the patients previously treated had died, but when the new system had been introduced, three out of seven patients recovered. Judging from this result, M. Barthez is convinced that the instillation is innocuous, and that it is even useful. In order to ascertain the different effects produced by solution of chlorate of soda and by pure water, a patient was treated by instillations of water only, but although the instillation was very frequently repeated and cough was excited, yet no other liquid but water was thrown out. At last, solution of chlorate of potash was substituted for the water, and it was instilled every quarter of an hour; and at the end of about an hour a remnant of false membrane was evacuated, and then other portions in succession until the next day. The suffocation diminished in proportion, and the patient recovered completely.

M. Barthez relates five cases in which the chlorate of soda was employed in instillations in the trachea; and although he admits that the cases are not sufficient to establish incontestably the efficacy of this treatment, yet he thinks that the beneficial action of the soda-salt is very probable. Tracheotomy ought not to be performed unless there is reason to suppose that a false membrane exists in the trachea; even when the false membrane exists, it is useless to employ instillations when there are symptoms of diphtheric poisoning, or when the expectoration of false membranes is abundant; but when tracheotomy has been performed, and it is determined to use instillations, then the chlorate of soda appears to assist the child in discharging the false membranes which oppose the entrance of air into the lungs.—*Brit. and For. Med. Chirurg. Rev.*, Jan. 1859, from *Bull. Gén. de Thérap.*, May 30, 1858.

—

15. *Chlorine in the Treatment of Diphtheria.*—The *British Medical Journal* of March 8, 1859, contains two communications on this subject, one by Mr. C. F. Hodson, and the other by Mr. S. A. Alford.

Mr. Hodson recommends the inhalation of the vapour of boiling water mixed with a portion of solution of chlorinated lime, and he relates the case of a child successfully treated by this method.

Mr. Alford recommends a gargle of chlorinated soda, of the strength of from half a drachm to a drachm in an ounce of water, to be used every ten or fifteen minutes, so as to wash away, and *keep washed* away, the morbid formation, "and, by the constant application of the chlorine contained in the gargle, destroy the poisonous character of the disease." When the plan is persevered in, he says, "the white fungi and jelly-like mass was washed away; and the throat is kept free by constant gargling."

He believes "the chlorine itself not only counteracts the poisonous nature of the morbid secretion, and destroys its deleterious character, but also has a beneficial effect on the system at large; and again, by destroying the virus, prevents its spreading to other members of the family. The disease has never spread where this plan has been adopted. All these points have satisfied me in the use of this remedy, and I am pleased to find others have found it equally successful, as noticed in the Journal by Dr. Bryden. The character of the gargle is important, but I feel the frequently washing of the throat to be equally essential; and for this reason, I prefer the gargle being used every ten or fifteen minutes to the dilute hydrochloric acid only applied occasionally, as used in some of the metropolitan hospitals. In addition to the frequent washings of the throat, which I consider *the* treatment, I apply *spongio-piline*, frequently steeped in hot water, tied round the neck; and at once keep up the strength by stimulants; viz., wine and brandy, with eggs, arrowroot, or water. I give bark and chlorate of potass with henbane, and an anodyne at night (twenty minims of liquor opii sedativus); for sleeplessness has been a marked feature in all my cases; aperients of a warm but decided nature, and little or no mercury, make up the treatment I adopt. When the above plans have been carried out, I have found them invariable successful.

"In several severe cases of ulcerated sore throat, the same gargle, constantly applied, has succeeded."

16. *Treatment of Chronic Alcoholic Intoxication.*—Dr. MARCET read a paper on this subject before the Western Medical and Surgical Society (Jan. 21, 1859). The author began by stating that nervous symptoms resulted from the long-continued use of alcoholic beverages, and that oxide of zinc was a remedy for such symptoms. The physiological and therapeutical properties of this drug were then passed in review, the author stating that he had himself observed the oxide to induce drowsiness, and even sleep, which might explain its sedative and anti-spasmodic properties. In cases of chorea, mild hysteria, paralysis, and lead palsy, its use gave but unsatisfactory results; and in the majority of cases of epilepsy it cannot be considered an effectual remedy. The author then analyzed twenty-seven cases of such a chronic state of intoxication, giving a synoptic table, on which were noticed the following points: 1. Name, etc. 2. Quality and quantity of drink taken. 3. Period of existence of intemperance. 4. Sleep. 5. Hallucinations. 6. Trembling. 7. Other nervous symptoms. 8. Pre-existing disease. 9. Result of the treatment. Ten of the above cases were taken in detail, the results showing the efficacy of the oxide of zinc as a remedial agent. With respect to the treatment, it was not merely necessary for the patient to cease drinking, as the symptoms referable to the nervous system often occurred long after the habits of intemperance had been abandoned, but that an active treatment was also absolutely necessary. The oxide of zinc was given in doses of two grains, twice a day, in the form of powders, an hour after each corresponding meal. The dose was generally increased in the ratio of two grains every three days, until the patient took six or eight grains twice a day. Thus sleep was soon induced, the trembling of the body and limbs rapidly disappeared, and the patient no longer suffered from headache or giddiness, the hallucinations vanished, and in the course of from three to six weeks the patient had recovered from a long and severe illness. The weakness, the common symptom accompanying the disease, was very difficult to overcome, and he states that it often persisted a long while after the individual was quite well in every other respect. Another fact noticed was the complication of chronic alcoholic poisoning with bronchitis and rheumatism, in which cases the effects of the oxide were less marked. In these instances the functional disturbance of the nervous system often gave way without any improvement in the co-existing disease. Accordingly, in these cases, the author added to the treatment as soon as the effects of the oxide were exhausted. The result of the twenty-seven cases were as follows: 6 continued attending; 11 had been discharged, cured; 4 left the hospital (Westminster), quite recovered; 4 much improved; and 2 ceased attending on the 1st and 2d inst.—*Med. Times and Gaz.*, Feb. 12, 1859.

17. *Great Pigment Deposit in the Skin without Disease of the Supra-renal Capsules.*—In our previous No., p. 251, we gave a brief notice of this case, but as it is one of much interest we shall now give further particulars in regard to it, from an account recently published by Dr. E. A. PARKES. (*Med. Times and Gaz.*, Dec. 11, 1858.)

William Barker, aged 66, a cabman, of extremely intemperate habits, was admitted into University College Hospital on October 7, 1858, with ascites, dependent on contracted liver. He was a fine strong-built man, and in spite of exposure to weather and of his habits, had had remarkably good health. The only illness he could recall to mind was an attack of jaundice seven years before, for which he was treated in University College Hospital for five weeks. He left the hospital apparently well. Some time afterwards (four or five months) he noticed that some parts of his skin (which before had been of healthy colour) were gradually becoming darker, especially the skin of the face and neck; he then noticed dark patches on the body, and on the arms and thighs, and these increased until a very considerable part of the whole body had assumed a very dark hue. Those portions of the skin which did not become dark became, he thought, even whiter than before. This discoloration advanced very gradually and continually for several months; he was not quite clear how long; sometimes saying that it was about six months, and at other times that it was a year or even eighteen months. But it seems clear that after a certain time the darkening process stopped, and since that time, now certainly five years, if not more,

the skin remained unaltered, and presented the same characters as when he was admitted into hospital in 1858. During this change of color he appears to have had good health; he continued to follow his occupation, and to drink as before from half to three-quarters of a pint of gin daily. There seem to have been no general weakness, impairment of nutrition, or anæmia, until about four months before death.

In the summer of 1858 he began to feel ill and weak, and to lose his appetite, and in August he observed that the abdomen was swollen.

When admitted in October he presented a very singular appearance, from the extreme darkening of great part of the skin. The epithets "bronzed skin," or "mulatto skin," might perhaps be applied to it, and certainly would not exaggerate its intensity. The dark tint was uniform, or with slight variations of tint over the face, neck, shoulders, and arms; but over the trunk, and especially over the abdomen, it was diversified with irregular white patches, varying in size from one to four inches in diameter. It was uncertain whether these patches were whiter than natural. The scrotum gave the best example both of the dark colour and of the white patches. Over the upper part of the thighs the skin was also dark, with some small white patches; towards the knees the dark colour lessened, and below the knees the skin looked of a natural tint. The skin had its ordinary elasticity and sensibility. There was a little pigment on the conjunctiva, and a dark patch on the mucous membrane of the lips.

The conjunctivæ were also slightly yellow, and the urine contained a small quantity of bile pigment; but the discoloration of the skin was not like that of Melas Icterus, to say nothing of the white patches being altogether opposed to the hypothesis, that the dark tint could be attributed to bile pigment.

In other respects the patient presented the usual symptoms of contracted liver with ascites, and with very scanty and deeply pigmented (red and pink) non-albuminous urine. The lungs were healthy; the arteries at the wrist rigid; the heart was pushed up by the ascites, and there were extremely faint obstructive and regurgitant murmurs over the aortic valves. The nervous system was unaffected.

Paracentesis was employed, and eighteen pints of fluid drawn off; but the fluid collected again very rapidly; and in spite of various remedies the patient sank and died on the 10th of November. During life the blood was examined microscopically by Dr. Harley, who found no excess of white corpuscles, and no free pigment; the red corpuscles were "large, flabby, and dingy-looking;" blood crystals could not be obtained.

This patient had been regarded with much interest during life, as it was supposed to be a marked case of Morbus Addisonii. After death the microscopic characters of the skin were found by Dr. Harley to correspond with those which have been previously noticed in cases of the so-called bronzed skin; there was, namely, great pigment deposit in the rete-mucosum. There was also pigment deposit beneath the epithelium of the peritoneum, forming several black patches. The supra-renal capsules were perfectly healthy, both in size, shape, makroscopic and microscopic characters. I requested Dr. Harley to examine them, and annex his report.

"*Right supra-renal Capsule.*—Normal in color; of healthy consistence; of usual size and shape; measures 2¼ inches in its longest diameter; 1¼ in height; ¼ at the thickest part. On section the medullary substance is beautifully well marked, of the healthy slate colour, and firm consistence; no large cavity in it; no grumous matter; rows of small sinuses, distinct, full of healthy-looking blood; cortical portion well defined, running all round the medullary in a well-marked yellow ring; looks perfectly healthy."

"*Left Capsule.*—Normal in colour, size, shape, and consistence; measures 2⅜ of an inch in longest diameter; 1¼ high. On section the medullary as well as the cortical substance appears perfectly healthy. Examined with the microscope, the columnar cell-masses of the cortical substance are beautifully seen; the medullary cellular matter was equally distinct; not the remotest trace of disease could be detected in either capsule."

I should mention that the capsules and a portion of the skin were modelled in wax by Mr. Tuson; and these models, as well as the capsules themselves, and

a piece of skin preserved in spirit, are deposited in the museum of University College, and can be seen by any one. Dr. Harley also has made drawings of the microscopic appearances of the skin and capsules.

I need not detail the condition of the other organs at length; the liver weighed thirty-four ounces, and presented a fine example of the contracted hobnail, or granular liver; the spleen weighed 14½ ounces, its capsule was uniformly thickened, to the amount of about a quarter of an inch; on section it was firm, not evidently hæmorrhagic, and without apparent enlargement of the Malpighian bodies; it was not examined microscopically. The kidneys 4½ ounces each; they seemed healthy to the eye: on microscopic examination they were found to contain perhaps a slight excess of fibrous tissue, but the tubes and epithelium were quite healthy.

The facts which may be taken as certain in this case, are the existence of extensive pigment deposit in the rete-mucosum of the skin, without the slightest trace of disease of the supra-renal capsules. Whether the disease is to be received as an example of the Morbus Addisonii, and if so, whether it is sufficient to destroy the doctrine of the supposed necessary coincidence between pigment darkening of the skin and disease of the supra-renal capsules, are points in which the readers of this journal will judge for themselves. For my own part, I can see no distinction between the skin affection in this case and in those cases recorded as examples of the Morbus Addisonii, in which the skin has been microscopically examined. The anatomical condition of the skin was the same; the depth of colour, though great, was merely dependent on a high degree of the anatomical condition (viz. pigment deposit) and the fact that some patches of the skin were devoid of colour, is pointedly described by Dr. Addison as occurring in some of his patients. I therefore can come to no other conclusion than that this case shatters the doctrine of the necessary connection between this peculiar state of the skin and disease of the supra-renal capsules. It is true, however, that there was no anæmia, nor any of those grave but obscure constitutional symptoms of weakness and general failure, which are described so carefully and emphatically by that eminent physician; and, therefore, this case proves or disproves nothing as to the connection between disease of the suprarenal capsules and grave anæmia with or without pigment changes in the skin.

—

18. *Complete Disorganization of both Supra-renal Capsules without Discoloration of the Skin.*—While the case related above by Dr. Parkes distinctly proves that there may be very great bronzing of the skin without any disease of the supra-renal capsules, the case now to be noticed, an account of which we find in the *Med. Times and Gaz.* (Jan. 8, 1859), given by Mr. NORRIS F. DAVEY, demonstrates that there may be complete destruction of the capsules while the stain remains of marble whiteness.

R. A., aged 18½ years, a servant-girl, reputed to be healthy, was confined Dec. 22, 1857, of a child at the full period, and died rather unexpectedly two days afterwards.

Sectio Cadaveris, Dec. 30.—Body fat, of uniform marble whiteness; no putrefaction. Legs œdematous. Three-quarters of an inch of subcutaneous fat. *Thorax.*—Four ounces of serum in pericardium. Heart enlarged, pale; fatty degeneration of muscular substance. Both ventricles dilated and hypertrophied, the left very much so; both full of fibrinous clots. Valves healthy. Auricles: right dilated; left natural. Pleural cavities containing each about a pint of serum. Lungs pale, collapsed, gray; posterior lobes infiltrated with serum; otherwise healthy. Abdomen containing three or four pints of serum. Omentum, etc., very fat. Stomach quite healthy. Liver enlarged, pale; its convexity indented by the enlarged heart, fatty, containing much serum. Small intestines and colon healthy. Pancreas and spleen natural. Kidneys: left much enlarged, fatty; right less so. *Supra-renal Capsules.*—Left, large, dark gray in colour externally; no trace of natural structure on section; its contents consisted wholly of dark reddish-brown, soft matter, mixed with yellowish, cheesy masses. Right, very small, pink, semi-transparent, and gelatinous in appearance, both without and within. They were preserved for microscopic examination. Uterus

pale, firm, natural in appearance on section; point of attachment of placenta seen at fundus. Ovaries and bladder healthy. Head not examined.

Upon examining the supra-renal capsules under the microscope with a good ¼, and also with a Ross's ⅛, I could find no trace of the normal cell structure, the left consisting of dark amorphous matter mixed with abundant oil-globules; the right almost entirely of fatty matter.

Dr. Parkes's case proves distinctly that there may be very great bronzing of the skin without any disease of the capsules; the present case proves that there may be complete destruction of the capsules, and yet the skin remain of marble whiteness; it must, therefore, be conceded that the remarkable coincidence of darkened skin and diseased capsules, discovered by Dr. Addison, though very frequent, is not necessary.

—

19. *Intense Neuralgic Pain in the Head; Sudden Death; Cysts in the Cerebellum.*—Dr. James Turnbull, Phys. to the Liverpool Infirmary, relates (*Liverpool Medico-Chirurgical Journ.*, Jan., 1859) two instructive examples of this.

Case I.—Sam. Carpenter, a sailor, aged 32, was admitted into the Royal Infirmary on the 12th of April, 1857, having been ill with pain, in the head and neck, of most intense character for six weeks. He had the greatest difficulty in turning or moving the head, and the pain was chiefly in the right side. The sight of the right eye was somewhat impaired, but there was no difference in the size of the pupils. He had weakness, but no loss of power or feeling in the limbs. The tongue was very much furred when he came in, but it became nearly clean at one time, being variable in its condition. He had occasional vomiting, and the bowels were obstinately confined. Various remedies were tried—aperients, quinine, and opium, without any benefit. It was thought there might be some deep seated disease of the vertebræ or bones at the base of the skull, and issues were made with potassa fusa, and iodide of potassium given. These means all failed in affording any relief, and he was then brought gently under the influence of small doses of blue pill. When his mouth became affected, he appeared to experience great relief, but in a day or two after, he died suddenly whilst eating his dinner. He was admitted on the 12th of April, and died on the 14th of May, having been ill therefore about ten weeks.

Post-mortem.—There was no disease found in the vertebræ of the neck, or in the bones at the base of the skull, but a cyst, the size of a pigeon's egg, was discovered in the right hemisphere of the cerebellum, embedded in it, and almost entirely covered by the cerebral substance. The walls were very thick and rather vascular, and it contained a thick, yellowish, clear fluid, with also a clot of blood, which occupied about a third of the cyst.

Case II.—Mrs. M., a lady about 34 years of age, sent for me on the 8th of May, to see her in consultation with Mr. Kay. The previous summer she had suffered from a severe and acute affection of the brain, for which she had been bled in the arm. She was pregnant at the time, but soon recovered from the attack. Five months previous to my seeing her, she began to suffer severe pain in the head, for which almost every kind of treatment was tried—counter-irritation and depletion, as well as tonics, but all without the slightest permanent benefit. I found that she had very severe pain in the right side of the head, behind the ear. Occasionally, and especially when she moved her head, most acute paroxysms came on, causing her to scream out. At other times she was almost free from pain, but was always rather unwilling to move her head, lest it should bring it on. There was great irritability of the stomach, and she frequently vomited dark bilious matter. The bowels were rather costive. The tongue was a good deal furred, especially at the back. There was no heat of skin, or febrile disturbance, and the pulse was generally 90 or under. She had deafness of the right ear, but the sight was unimpaired, and there was no loss of sensation or muscular power.

She was brought gently under the influence of small doses of blue pill, and for a week after she was comparatively free from pain, so that hopes were entertained of her recovery.

The pain and vomiting then returned as badly as before, and belladonna and

Indian hemp were tried with some advantage. Morphia, however, was found to afford the most relief.

There was no particular change till the 20th of July, when she had a very severe paroxysm of pain, and died rather suddenly.

Post-mortem.—On examination of the brain, a cyst was found in the right hemisphere of the cerebellum, about the size of a small hen's egg, and contained a clear yellowish serous fluid. The cyst was lined with a very fine membrane, like serous membrane. The brain was otherwise healthy, and there was no disease of bone.

Remarks.—There can be little doubt, that in the first of these cases the cyst was the result of apoplectic effusion. Though not brought out by the history of the case, this seems sufficiently evident from the fact of there being a portion of clot in the cyst. In the second case there had been a previous acute attack in the brain, the real nature of which, though not exactly known, was probably of a similar description. These cases show us some very important practical facts, and I have not met with any recorded cases exactly like them. They prove that cysts in the cerebellum are, at least, by no means innocuous, but that they may produce the most intense description of paroxysmal pain, and that they are probably a more common cause of sudden death than is generally known.

—

20. *Cases of Ulceration and Perforation of the Vermiform Appendix.* By Dr. A. MERTENS, of Berlin.—Before referring to the cases, Dr. Mertens makes some remarks upon the vermiform appendix; he notices its constant presence, not only in man but in apes, in the animals which walk erect, and its peculiar structure indicating that it must have an especial function. The elder Monro supposed that the vermiform appendix served to keep the neighbouring intestine moist. In modern times it is merely looked upon as a rudiment of what we see in perfection in the lower animals. Neither of these views is well founded. Dr. Mertens throws out a suggestion that the vermiform appendix may possibly be analogous to the pancreas, playing the same part, or a like part, with reference to the cæcum, as the pancreas does to the duodenal digestion. From his own investigations, he is led to believe that the cæcal end of the appendix is surrounded by muscular fibres, which may be looked upon as a sphincter muscle. The functions of the cæcum are not well understood; some authors have supposed that a secondary digestion takes place in it, and have consequently denominated it the second stomach, but this is all hypothesis. It would be well if some one with time and opportunity at his disposal would institute a series of experiments, and investigate the structure, the comparative anatomy, and physiological significance of the vermiform appendix. That it has great pathological importance is proved by the cases in which ulceration has caused death, and that it is not a mere portion of intestine we may assume from the fact that dangerous consequences arise from the presence of feces or foreign bodies. It is remarkable, that young persons are generally the subjects of ulceration and perforation of the vermiform appendix, a fact which reminds us of the observation of an English author, namely, that the vermiform appendix appears to have no other function than that of arresting cherry-stones swallowed by thieving children.

Dr. Mertens relates two cases which occurred under his own observation. The first was a child of four years of age, which had been previously healthy; in the afternoon, after a hearty meal, the child was attacked by severe pain in the abdomen, which was considered to be cold by the mother, and treated accordingly. The pains, however, became more intense, with scarcely a pause, and nausea and inclination to vomit also now being added. Towards morning of the following day, the child was first seen by the reporter, who found it with cold extremities, a small, quick, thread-like pulse, and a distended abdomen, sensitive on pressure; the tongue was not loaded, there had been no evacuation from the bowels for twenty-four hours. There could be no doubt of the existence of intestinal inflammation. Calomel in large doses was directed, and soothing enemata administered. These remedies proved unavailing, the nausea and sickness persisting. Ice swallowed in small pieces afforded some relief. On the following day, the state of things was such as to indicate approaching death; the hands and feet were covered with cold sweat, the pulse thready, the abdomen hot and

tympanitic, and vomiting of a coffee-brown-coloured fluid was now present. There had been no evacuation from the bowels; all means directed to attain this object had proved ineffectual. The child died towards four o'clock next morning. The body was examined thirty hours after death. The contents of the thorax were free from disease. On opening the abdomen, a quantity of fœtid gas escaped, also some yellowish fœtid fluid. The stomach was contracted; the liver, spleen, pancreas, and small intestines were perfectly sound. Some inches of the cæcum were intensely red; the vermiform appendix was narrowed at its junction with the cæcum, and at its free end thickened, swollen, red, and perforated by two ulcers. Neither in the appendix itself nor in the peritoneal sac could any foreign body be discovered. The large intestines were free from disease, and the peritoneum did not present any alteration, except that, in the neighbourhood of the cæcum it was strongly injected, but not inflamed.

The second case was of interest from its being diagnosed during life, and also from its being caused by a cherry-stone, which, being forced into the appendix, was the cause of perforating ulceration. The subject was a child of five years of age, who was in blooming health, stout, merry, and full of life and spirit; he was seized with severe abnormal pains in the evening, which increased from hour to hour. On the following morning he began to vomit, the first matters ejected being the remains of food, afterwards a bilious dark-brownish fluid. In the night there was an alvine dejection, but henceforward the constipation was complete, continuing until death, no means employed being adequate to overcome it. The belly was greatly distended, and painful on pressure, but this sensibility was greatest in the neighbourhood of the cæcum. The countenance was not so sunken, nor the expression so anxious, as is generally the case in abdominal inflammation. This circumstance, the manner in which the disease commenced, its duration (nearly three days), with the situation in which the pain was first experienced, and lastly, the absence of fecal vomiting, led to the belief that the vermiform appendix was the seat of the affection. Tympanitis increasing, and frequent attacks of vomiting of a dark fluid, but destitute of fecal odour, supervening, death ensued. On examination of the body, all the organs were found healthy. The stomach was empty and contracted; the intestinal canal full of air, but otherwise normal; the vermiform appendix was of a blackish-blue colour, and at one side was a gangrenous perforation; a cherry-stone was found not far from this, enveloped in a purulent mass.

In addition to these two cases which came under his own notice, Dr. Mertens gives two similar cases reported by Mr. Amyott, and published in the *Medical Times*. He notices the fact of the four cases occurring in young persons of the male sex—perhaps an accident. He regrets that he has not an opportunity of considering the subject as regards age, sex, &c. &c., but refers to Rokitansky's works, and Copland's *Dictionary of Practical Medicine* (article "Cæcum"), for further information.—*Dublin Hosp. Gaz.*, Oct. 15, 1858, from *Journal für Kinderkrankheiten.*

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

21. *Disarticulation of the Scapula from the Shoulder-joint.*—A case of this was communicated to the Royal Med.-Chirurg. Soc. (Dec. 14, 1858), by G. M. Jones, Esq. The patient, a girl aged fourteen years and a half, had enjoyed good health until December, 1857, when she first felt pain at the top of the left shoulder, ascribed to the exertion of carrying a heavy child; severe inflammation about the shoulder followed, being most intense over the upper part of the humerus; an abscess formed, and burst spontaneously. The constitution suffered severely. When Mr. Jones first saw the patient, there were four large fistulous openings over the left shoulder, two communicating with the clavicle, one with the head of the humerus, one with the glenoid cavity, and one with the dorsum of the scapula, bare bone being easily felt in each. Several small fistulæ, which

did not apparently lead to necrosed bone, existed in the scapular region, and yielded an offensive discharge. The textures covering the shoulder were generally thickened and puffy, and tender to the touch. The patient's health and strength were failing rapidly, and Mr. Jones deemed operative interference imperatively called for. Accordingly, on the 19th of May, 1858, the patient having been placed under chloroform, the operation was performed. An incision was first made along the whole extent of the spine of the scapula, and carried an inch beyond towards the mesial line of the back; another incision was then made to meet this along the upper border of the bone down to its angle. The integuments were raised by careful dissection, and by this process the whole bone was fairly exposed, its periosteal investment being everywhere found so thickened, pulpy, and softened, as to yield easily to pressure of the finger. The acromial end of the clavicle being found to be softened and altered by disease, an inch of the bone was removed. The posterior scapular artery was the only vessel which needed a ligature; several small ones were closed to by torsion. Sutures and strips of plaster were used to bring the edges of the wound together, the deeper cavities, including the glenoid fossa, being plugged with lint. The operation occupied three-quarters of an hour. On examination, the scapula was found so extensively diseased that its characters were almost destroyed. The glenoid surface and neck were entirely removed, and no vestige of the spine remained, its position being occupied by new, irregularly-deposited osseous matter, at the base of which lay a deep chasm, that extended three-fourths across the body of the bone. The inferior angle of the bone was the seat of extensive caries. The body of the bone presented two deep perforations, and all these different cavities contained sequestra of dead bone, while other portions of the scapula were in different stages of exfoliation. There was also a large amount of new osseous matter deposited in different situations about the bone. The head of the humerus was found healthy, and covered with its natural cartilage. With the exception of a very critical condition during the first two or three days, which was ascribed to the action of the chloroform, the patient made a good recovery. The wound healed entirely by granulation, the head of the humerus being exposed for some time. She was unsparingly supplied with nutritious diet and stimulants. She left her bed and walked in the garden in three weeks and as many days, and at the end of a month she could sew without pain or difficulty. At present she can raise her arm twelve inches from her side, and can support it horizontally from the body, with very slight exertion; she can raise the hand to the opposite shoulder or to the mouth with ease, but not to the top of the head; she can put her arms behind her, can lift a large and heavy hospital register book, and can scrub the floor or make her bed. There is a decided falling of the shoulder, but by no means amounting to deformity. There is no wasting of muscular substance on the chest or back, and when dressed it would not be perceived that any serious operation had been performed. The deltoid is fully developed. The head of the humerus is easily felt moving freely in its new bed, and not the slightest pain is felt on any amount of motion. Up to this present time, the range of this motion has steadily increased, and, with the exception of the movements for which the scapular origin of the deltoid is indispensable, it may be confidently expected to increase still further, and nearly to equal that of the other arm.

The author concluded his communication by observing that he considered there was much less danger from hemorrhage in the removal of the entire bone than, as in Mr. Liston's case, in the excision of only a portion; but he should prefer the former operation in any future case, and he trusted that the relation of this successful instance would go far to remove any prejudices now existing against this operation.—*Med. Times and Gaz.*, Jan. 1, 1859.

---

22. *Statistical Analysis of* 186 *Lithotomy Operations.*—We find in the *Med. Times and Gaz.* (Jan. 8, 1859) an interesting statistical analysis of 186 lithotomy operations performed in different London hospitals within a period of three years and a half, ending July, 1857.

Of these 186 cases, 146 resulted in recovery, and 40 ended in death. Of the whole number, 137 were under the age of 20, and of these 123 recovered and only 14 died; while of the 49 in which the patients were adults, we find but 23

recovered, and no fewer than 26 died. These figures show in a very strong light the influence of the age of the patient upon the prospects of a lithotomy operation. We shall now proceed to exhibit the extent of this influence in greater detail, and then to examine as to the several causes of the fatality of this operation, and their relative importance.

Influence of the Patient's Age on the prospect of Recovery.—In the subjoined table the cases have been classified according to the patient's age:—

Age.	No.	Recovered.	Died.	Per cent. of deaths.			
1	1	1	...	...			
2	8	7	1	12.5	1 in 8		
3	24	20	4	16.6			
4	15	15	...	...		Under 10 years of age.	8 deaths in 109 cases, or 1 in every 13.6.
5 to 8	43	40	3	7	1 in 14		
8 to 10	18	18	...	...			
10 to 15	21	15	6	28.5	1 in 3.5	Between 10 and 25 years of age.	7 deaths in 36, or 19.4 per cent. or 1 in every 5.
15 to 20	7	7	...	...			
20 to 25	8	7	1	12.5	1 in 8		
25 to 30	3	2	1	33.3	1 in 3		
30 to 35	3	1	2	66.6	2 in 3	Between 25 and 45.	4 deaths in 8, or 50 per cent. or 1 in every 2.
35 to 40	2	1	1	50.0	1 in 2		
40 to 45	...	...	...	...			
45 to 50	3	1	2	66.6	2 in 3		
50 to 55	5	3	2	40.	1 in 2.5	Between 45 and 60.	9 deaths in 17, or 52.8 per cent. or more than half.
55 to 60	9	4	5	55.5	1 in 1.8		
60 to 65	7	1	6	85.6	6 in 7		
65 to 70	7	3	4	57.0	4 in 7	Between 60 and 75.	12 deaths in 16, or 75 per cent. or 3 in every 4.
70 to 75	1	...	1	100.			
75 to 80	1	...	1	100.			
Total	186	146	40				

Thus it would appear that between the ages of 8 and 10 is the period in which the lowest death-rate after lithotomy prevails. Of 18 operations performed on patients between these ages all resulted in recovery. If we group together all between 5 and 10, we shall have 61 cases, out of which only 1 in 20 ended fatally. Children under the age of 5 appear to bear the operation not so well as those a little older, since of 48 operations 1 case in 9 ended in death. If we pass by the fact that no death appears to have occurred out of the 7 cases between the ages of 15 and 20 as probably (on account of the smallness of the number) a coincidence, we may allege that amongst adults the rate of mortality rises with the age of the patient. Of those under 10, only 1 death in 13.6 cases occurred; in those between 10 and 25 the rate has risen to 1 in 5; in those between 25 and 45 it has reached 1 in 2; between 45 and 60 it is actually more than half; while subsequent to the age of 60 it attains the frightful proportion of 3 in every 4. There can be no doubt that this appalling mortality in patients of advanced age is in part produced by the fact that of late years the best subjects have been treated by lithotrity, and that, in the hands of many surgeons, only those patients not considered to be in sufficiently good health to bear the latter have been submitted to lithotomy. Still we regret to know that this circumstance has but a very limited application, since lithotrity has been practised to a very small extent.

The explanation of the comparative freedom from risk in young patients is to be found in the fact that disease of the kidneys is a very common concomitant of vesical calculus in grown-up persons, and a very rare one in children. The tables about to be adduced, exhibiting the cause of death at the several ages, will show that, of all the various evil influences, renal disease is by far the most important. In the list of 14, however, in which death was referable to it, we

find only 3 cases in which the patients were under 20, and only 1 in which the child was under 10. On the contrary, of the four who died of sthenic peritonitis, all were under 20, and 2 under 10. Peritonitis, hemorrhage, and shock of the operation, rank as the chief causes of death in childhood.

Much importance has been attached by some writers to the weight of the stone as a means by which to estimate the risk incurred. The heavier the stone the greater the danger. To Mr. Crosse, of Norwich, we owe a valuable collection of data on this point. Quoting Mr. Crosse's tables, Mr. Coulson, in his work on diseases of the bladder, actually goes so far as to assert: "The chance which a patient has for recovery can, therefore, be calculated beforehand, and, independent of every other consideration, from the ascertained dimensions and weight of the stone." The statistical fallacy here involved is transparent. Of course, children have, as a general rule, much smaller calculi than adults; and, as we have seen above, they are, by very far, the best subjects for lithotomy. The cause of the freedom from risk in children is not, however, to be found in the fact that their calculi are lighter, which is little more than a coincidence; but in their usual freedom from renal disease. Of course, no one will deny that the large size of a stone is a circumstance of some prejudice to a patient's prospects. A surgeon would, however, commit an absurd error if he should imagine that a boy of ten, from whom he had removed a mulberry calculus weighing several ounces, had only an eighth part of the chance of recovery which was possessed by a man of sixty from a phosphatic one of not as many drachms in weight had been removed. In all probability the reverse estimate would be nearer the truth. The fallacy to which we have referred, viz., that difference in weight of the stone is, as a rule, coincident with difference in age of patient, appears to us to make any statistical calculations of weights quite valueless for purposes of prognosis. All that can be said is that of patients of equal age and similar degree of health, those who have large calculi have a somewhat worse chance of recovery than the others; and even this rule must be allowed to receive constant modifications from consideration of the composition of the stone in each individual case. Leaving what we have to adduce, as to the influence of the previous health of the patient upon his chances of recovery after lithotomy, to another part of the report, we will now pass to

Causes of Death after Lithotomy.—In the following list we have endeavoured to classify the cases according to the accident or lesion which appeared to have exerted the most efficient influence in bringing about the fatal event. In many cases, of course, more than one had been at work at the same time. Thus, some cases in which the main lesion appeared to be disease of the kidneys had also inflammation of the bladder and of the pelvic cellular tissue; while in others, which died ultimately of some distinct visceral disease, hemorrhage occurring during or after the operation, might be reasonably supposed to have diminished the patient's chance and predisposed him to the attack. The classification is, therefore, only an approximation to the truth, and must be so considered. Proceeding on this plan, we find that, of the forty cases ending fatally, death was referred to

Renal disease	in 14 instances.
Hemorrhage	" 4 "
Pyæmia	" 4 "
Peritonitis	" 4 "
Shock of operation	" 2 "
Extravasation of urine	" 2 "
Abscesses about the bladder	" 2 "
Wound of the fundus of the bladder by the knife	" 2 "
Exhaustion	" 1 "
Convulsions	" 1 "
Cystitis	" 1 "
Bronchitis	" 1 "

In the remaining two cases we do not possess sufficient detail to allow of our assigning to any class without risk of error.

Renal Disease as a Cause of Death.—In the following table we have arranged

the fourteen cases in which disease of the kidneys was the lesion to which death was attributable:—

No.[1]	Age.	State of health.	Date of death.	REMARKS.
126	10	Delicate	11th day	Stone weighed 2 drs. Both kidneys disorganized.
41	14	Bad	11th day	Much bleeding; protracted operation; peritonitis.
31	14	Moderate	4th week	Abscesses in the right kidney.
12	21	Good	10th day	Stone large; acute inflammation of kidneys and ureters.
103	37	Bad	3d day	The subject of diabetes insipidus.
53	54	Very bad	6th day	
171	56	"	2d day	Stone large; he sank from the shock.
73	58	"	15th day	Had suffered from stone for ten years.
140	59	Hopelessly ill	2d day	Stone large; extensive disease of liver, kidneys, and bladder.
147	63	Bad	6th day	Calculi in the kidney; acute inflammation.
109	64	Good	19th day	Two large phosphatic stones; abscess behind the bladder, as well as diseased kidneys.
86	68	Very bad	3d day	Stricture of the urethra.
94	68	"	4th day	He was paralytic; acute inflammation of bladder; cystic disease of both kidneys.
116	68	Feeble	12th day	Calculi in the kidney; small stone.

We have not included in the above list those cases in which acute disease of the kidneys appeared to be secondary to a general pyæmic state. In most of those included there was reason to believe that renal disease existed prior to the operation. It will be seen that in two instances the patient sank on the second day, no doubt directly from the shock of the operation, while in five others death occurred within a week. In two cases, the operation was done at the patient's urgent request, in the hope of mitigating his sufferings, but under circumstances which almost precluded the hope of recovery.

Hemorrhage as a Cause of Death. (Five Cases.)—In the following five cases so much blood was lost, either at the time or afterwards, that it seemed fair to attribute the patients' ill progress to the debility induced.

No.	Age.	State of health.	Date of death.	REMARKS.
20	5	Good	8th day	Five or six attacks of secondary hemorrhage.
41	14	Bad	11th day	Free bleeding at the time, none afterwards.
157	26	Poor	6th day	Severe hemorrhage on same day (venous).
4	45	Fair	40 hours	The bleeding was venous, and at the time. There was a growth of cancer in the bladder.
131	79	Good	7 days	Secondary hemorrhage on the third day.

In only the first and third of these was the fatal event directly and unmistakably induced by the loss of blood. In the others, the hemorrhage acted rather as a predisponent. It is interesting here to remark that the two cases in which

[1] The numbers given in this column refer to the registry of the cases in the writer's note-book, and are retained only for the convenience of reference.—J. H.

of all in our list most blood was lost, both recovered. In one of these there was little doubt that the internal pudic had been cut, and the hemorrhage was most alarming. Case number 41 is one in which the cause of death was very complicated. It has already been mentioned among the deaths from renal disease.

Pyæmia as a Cause of Death.—(Four Cases.)

No.	Age.	State of health.	Date of death.	REMARKS.
159	13	Delicate	19th day	
15	31	Very bad	8th day	Diseased kidneys.
121	60	Very stout	6th day	
158	60	Good	2d week	

Pyæmia has hitherto not been much considered as a cause of lithotomy fatality. There can be little doubt that it has prevailed of late years much more extensively than it formerly did. The four cases in the above group were examples of the disease in its typical form. The first we have already published in full detail; in it purulent depôts were found in several organs. In the second, a man in miserably ill health, worn out with suffering, had lithotomy performed at his own request, and died on the eighth day, having had rigors and other symptoms of pyæmia. The kidneys were found disorganized, there were small deposits in the apices of the lungs (tubercular?), and in one knee-joint was a collection of pus amounting to four ounces. The third is a very remarkable case, on account of the early period at which the disease set in. The patient, a man of 60, appeared in good health, but was very stout. The stone was a large one, but was got away without unusual difficulty. A severe rigor occurred within twenty-four hours of the operation, and pain was complained of in one shoulder-joint. Profuse sweatings and an intermittent pulse soon followed, and he rapidly sank. At the autopsy, both knees and both shoulder-joints contained pus; but the lungs, liver, and other internal viscera, were healthy. In the fourth case, purulent depôts had formed in the cellular tissue of both arms.

It is very possible that in certain other of the cases a dyscrasia, closely allied to the pyæmic, was connected with the cause of death. In those, for instance, in which acute disorganizing inflammation of the kidneys was found, such a suspicion might fairly be entertained. We have preferred, however, only to include under this heading those cases in which the nature of the disease was well marked. As being the direct cause of death in one-tenth of the fatal cases, it is evident that pyæmia must henceforth assume an important position in the rôle of dangers to be encountered in lithotomy practice.

It will be for additional observation to confirm or alter the impression; but we cannot help thinking that the occurrence of external suppurations, either in joints or cellular tissue, is more common when pyæmia follows operations on the bladder or urethra than when it is consequent on those in other parts. Also that deposits in the internal viscera are proportionately less frequent after the former. This impression is formed on the observation of several instances of fatal pyæmia after the external division of stricture, and after lithotomy, etc.

Pelvic Suppuration as a Cause of Death.—(Four Cases.)

No.	Age.	State of health.	Date of death.	REMARKS.
72	50	Fair	1 month	Extensive suppuration between bladder and rectum.
117	61	Good	10 days	The stone weighed nearly four ounces.
109	64	"	19th day	Inflammation of bladder and abscess behind it.
94	68	Very bad	5th day	Paralytic; stone small, but lodged in a pouch.

Of the above four, two cases (94 and 109) are given also under the head of renal disease, as in both there was extensive disease of the kidneys, as well as abscesses about the bladder.

Shock of the Operation. (Two Cases.)—In seven cases, the patients died within forty-eight hours of the operation. In five out of these there were other ostensible lesions to which death was referred; so that in two only did it appear attributable to mere shock. In one of the latter, the patient was a delicate boy, aged 3; the operator had withdrawn the staff before it had entered the bladder, and much difficulty had been encountered in completing the operation. There was no doubt but that, in addition to the prolonged operation, much more than the ordinary amount of injury was inflicted on the parts. The child sank and died on the third day. In the second case, a heavy, corpulent man, aged 62, sank into low delirium soon after the operation, and so continued until the third day, when death occurred.

Other Causes of Death. (Eight Cases.)—The eight cases which yet remain to be accounted for may be classed as follows: In two men, one aged 56 and the other 70, both in fair health, death appeared to result from extravasation of urine into the cellular tissue of the scrotum and perineum. In both, the scrotum sloughed most extensively. In one of these, death took place on the seventh, and in the other, on the fourteenth day. It is not a little remarkable, the extravasation of urine, to which formerly a very large proportion of deaths after lithotomy used to be ascribed, should have come to be regarded as one of the least frequent sources of danger. In one other case (No. 90), a child, aged —, previously in good health, died in convulsions thirty-six hours after the operation. In another (No. 77), a child of two years old, also in good health, sank within forty hours from acute bronchitis. This case was one of so much interest that we recorded it at the time in full detail. In one (No. 53), we ought, perhaps, scarcely to class the case as a lithotomy fatality, since the child had so far recovered as to have been discharged from the hospital. It was that of a very delicate child, aged 3, admitted with a perineal abscess and fistula, communicating with the urethra. After the operation, all did well, but at the time of discharge the wound was not quite healed. The child was re-admitted in a much exhausted state, and finally sank six weeks after the operation. In two cases, death was directly referable to wound of the fundus of the bladder by the operator's knife. Both the patients in whom this accident happened were adults. In each, extravasation of urine into the peritoneum of course followed. The last remaining case is one in which, in an elderly man with enlarged prostate, not only was the stone extracted, but the projecting middle-lobe of the prostate was cut away. Death from inflammation of the bladder followed three weeks afterwards.

—

23. *Ecraseur in the Operation for Anal Fistula.*—Mr. F. B. Quinlan, Surgeon to St. Vincent's Hospital, recommends the ecraseur for the operation of anal fistula, especially in severe forms of this disease occurring in persons of a broken-down or debilitated constitution. He prefers the instrument as improved by Charriere, in which instrument one end of the chain is fixed and the other is tightened by a nut working on a fine screw, each turn of which brings in one-tenth of a link. (See fig. in No. of this Journal for January, 1857, p. 56.) "The *ecrasement*, as accomplished by this latter instrument, whether it be quickly or slowly performed, is a process of crushing, smooth and perfectly free from jerking or laceration. If the surgeon be operating on a part in which there is no great dread of hemorrhage (if it be judged necessary to use the ecraseur in such a case), he can cut through it with M. Charriere's modification as quickly as with the original instrument. If, on the other hand, he be engaged in removing internal piles, vascular tumours, portions of the tongue, &c., he can bring in at each movement as small a fraction of a link of the chain as circumstances may dictate, and thus be insured, no matter how vascular the part may be, against all risk of bleeding. It has been objected to Charriere's modification, that in its use a portion of the part to be removed is apt to be dragged into it, instead of being smoothly cut through. If, however, the chain fit accurately to the slit in

the neck of the instrument—as in every well-made ecraseur it should—I do not see how this inconvenience can occur."

The only inconvenience experienced in operating on anal fistula with the ecraseur, Mr. Q. says, is in the introduction of the chain, but this may be easily accomplished as follows: "A long probe, bent to a proper curve, is passed through the perineal opening of the fistula, into the rectum, and out through the anus. To the eye of this probe is attached a piece of silk cord, the other end of which is firmly tied to the end of the chain (that end which is not provided with the hook or catch, of course, being preferable from its smaller size). The cord being drawn through the anus, is made tense by the left hand; the operator passes his right forefinger into the rectum, until he meets with the cord passing through the internal opening of the fistula. Hitching this part of the cord on his nail, he pushes it into the rectum as far as his finger will go; and in this way, by bringing a traction on the chain, as if from the interior of the pelvis, draws it easily and expeditiously into the rectum, and then out through the anus. This method (which was first used and recommended by Dr. O'Ferrall) has the advantage of getting the chain through with the smallest amount of laceration of the parts; in fact, I have never seen a fistula through which the chain could not be easily passed in this way on the first trial. It is certainly preferable to the plan of introducing it through a canula, or to that of previously dilating the fistula with an India-rubber tube."—*Dub. Hosp. Gaz.*, Jan. 15, 1859.

—

24. *New Method of curing Hydrocele.*—This method, suggested by Dr. SIMPSON, at a meeting of the Medico-Chirurgical Society of Edinburgh, is founded on the fact that iron and other metallic wires, when placed in contact with living tissues, did not, as a general law, excite inflammation to a higher stage than that of adhesion, or the effusion of coagulable lymph. Dr. Rothmund, of Munich, performed the radical cure of hernia by exciting adhesive inflammation in the returned hernial sac, passing, for this purpose, and leaving for eight days, a metallic needle traversing the peritoneum; and had not, it was averred, lost a single patient out of 1000 operated on. If metals in serous sacs create a higher stage of inflammation than the adhesive, such a fortunate result as this would not have been attained. Dr. S. had thought for some time that metallic wires passed through the sac of a hydrocele would act in two ways: first, they would drain off the fluid; and, secondly, they would subsequently, by their presence, form the surest means of exciting the subsequent amount of adhesive inflammation that was required for the cure of the disease. Dr. Young had, in one of his patients, afforded him an opportunity of putting this idea to the test. Dr. S. showed the Society the slender wire or metallic seton which had been used in this case. It was passed through the sac by first traversing the sac from below upwards with a long-handled surgical needle, such as is used in transfixing and tying hæmorrhoids, threading the eye of the needle, after it was projected through the scrotum above, with three or four slender iron threads, pulling the needle then backwards through the sac and out, and thus leaving the metallic seton in its place. The liquid drained off in an hour or two; adhesive inflammation set in, and progressed for two days, when it began to subside. The wires were removed on the third day; and the cure had remained apparently quite complete, with the vaginal sac firm and consolidated. Dr. Young had promised to publish the whole case at length. This method of treating hydrocele was, Dr. S. held, much simpler in its performance than tapping and injecting; not by any means so painful to the patients; less likely to produce a suppurative or dangerous amount of inflammation; and, perhaps, experience would show also, betimes, that it was surer and more certain in its results.—*Edinb. Med. Journ.*, Dec. 1858.

—

25. *Cases of Re-fracture of Bone, with Observations.*—Mr. F. C. SKEY, in an interesting paper read before the Royal Medical and Chirurgical Society (Jan. 11, 1859), brought before the society the subject of re-fracture of bone as a curative process in the practice of surgery. He refers the necessity for re-fracture to the occasional occurrence of cases of remarkable difficulty in the treatment, arising from complications of obliquity of fracture of the shaft of a long

bone, coupled with large muscular power, and unusual irritability of the nervous system. To such inherent difficulties are added a peculiar irritability of the integuments and moral wilfulness of disposition. Such, he says, are the causes of defective union of long bones, however assiduous may be the surgeon in attendance. They are not, however, selected by the author with a view to re-fracture, but are rather referred to as beacons to point to their rejection, such cases only being appropriate to the proposed treatment which are founded on causes incidental to the first fracture, but avoidable on the second. The operation of re-fracture is deemed warrantable in cases of bones of the lower extremity so united as to abridge the length of the affected limb to the extent of considerably impairing the locomotive powers of the person; and, in the case of the upper extremity, of restricting the movements of the forearm in rotation, or the fingers in flexion or extension; or, in either case, of local pain, caused by the entanglement of muscular fibre or nerve in the uniting medium of the fractured bones. The author states that re-fracture of bones, contrary to the authority of M. Dupuytren, may be effected without difficulty or danger, and at a term considerably beyond that prescribed as the ultimate limit at which re-fracture of bones is justifiable. The period is fixed by M. Dupuytren at sixty days. The author says: "I believe bones which have united to any length by lateral apposition of the entire diameter of the shaft, and in which the spaces formed by the contact of the two cylinders are filled with fibro-osseous matter possessing firmness sufficient to support the superincumbent weight of the body, are for a lengthened subsequent period susceptible of disintegration by a judiciously-applied force, to the advantage of their replacement to their natural relations prior to fracture, and without injury to the soft structures around them." The warrant for the appeal to the apparently violent proceeding of re-fracture is founded on the grounds of—1st, its practicability at a term of many weeks after the limb has been restored to exercise; 2d, its safety as an operative proceeding; and 3d, its indispensableness to the perfect utility of the limb involved. As regards the practicability: if the uniting material of bone be examined at the term of four or five months, it will be found to be composed of fibrous tissue, in which the deposit of bone is comparatively slight; while the perfect process of union is greatly protracted in cases of imperfect adaptation of surfaces, and we cannot calculate on any exact rate of progress towards recovery in cases presenting various and dissimilar conditions. In the upright position, the resistance is made by the whole length of the uniting medium. By bending the limb at the line of union, we have the resistance only of the transverse diameter. The practicability of re-fracture of a bone in any given case can only be brought to the test of experiment. It is obtainable on different conditions in different cases, depending on age, on sex, on the extent of surface involved, on the duration of the healing process, and, finally, on the tact, as well as the force of hand, employed in the operation; "but that on ordinary conditions," says the author, "it may be effected for many weeks or even months after the restoration of the limb to careful exercise, there appears to me no good reason to doubt." 2. With respect to the question of safety, the reasonable probability is considered to be that the bone will break at the site of the original fracture, and at no other part; and that the fracture may be effected without injury to the soft parts around. The author asserts the impossibility of breaking the dried radius by a powerful man; and, *à fortiori*, there can be no fear of injury done to any other cylindrical bone containing a larger quantity of osseous matter. A case is quoted in which the attempt was made to re-fracture a femur united for nine months, and no injury was sustained by the soft structures of the limb. 3. The question of interference can only be determined by the requirements of any given example. It is a question rather for the patient than for the surgeon. If fracture of the upper arm or forearm be followed by impaired utility of a character not likely to be benefited by time—supposing the union of the two bones of the forearm to be lateral, and not terminal—no evil can result from the attempt to re-fracture at any period, although the probability of success will necessarily diminish as time advances. In the case of the femur united by lateral contact, the necessity of an operation will be gauged by the imperfection of the gait in walking. The author has re-fractured the thigh-bone of a young healthy man at the period of seventy-seven

days from the date of the original fracture, and he believes the bone to have been susceptible of separation at a yet later period. The act of disuniting a bone is effected by slow laceration, rather than by a snap or fracture; it is not an immediate, but a gradual process, requiring persistent rather than sudden force—the act of tearing rather than breaking. With respect to the necessary elongation of the limb when the bone is disunited, the careful application of pulley force is recommended. The author concludes his paper by the relation of the particulars of six cases: two of re-fracture of the thigh, at the respective periods of seventy-seven and seventy-five days from the date of the original fracture; two of re-fracture of both bones of the leg, at the respective dates of the seventy-seventh and forty-fifth days, the latter operation being required in the case of a child six years of age; and one of re-fracture of both bones of the forearm, at the expiration of 120 days from the date of the original fracture. The sixth case is that of a fractured thigh, in which the attempt to re-fracture the bone at the end of nine months was unsuccessful.—*Med. Times and Gazette*, Jan. 22, 1859.

—

26. *Possibility of always detecting a Fracture a few weeks after its occurrence.*—Mr. CHARLES HAWKINS mentioned, during a discussion at the Royal Medical and Chirurgical Society (Jan. 11, 1859), a case of fracture of the thigh which he had not seen until seven weeks after the accident, and when then examined it was difficult to detect any sign of fracture having existed; it was again put up in starch bandages, but the patient again met with an accident, and the bone was again fractured at the original seat of injury. This proved beyond question that fracture had existed, of which he himself had had no doubt, though some surgeons who saw the case had found difficulty in believing it. The parts had been so well adjusted that scarcely any callus had been thrown out, and hence the great difficulty of determining whether a fracture had really existed.

Mr. SPENCER WELLS said that there was great difficulty in detecting the point at which there had been fracture, in cases where the starch or the plaster of Paris bandages were well applied. He had seen a case of fracture of the ulna in a young lady last year, which was put up temporarily by Dr. Stewart, of Greenwich Hospital. Mr. Wells put it up a few days afterwards in the plaster of Paris bandage, and after six weeks it was quite impossible to detect the site of fracture. This case, like that narrated by Mr. Hawkins, confirmed the doctrine that if a fracture were well set there might be so little callus formed that it was ultimately impossible to determine by examination that any fracture had existed. —*Med. Times and Gaz.*, Jan 22, 1859.

—

27. *Antiquity of Metal Sutures.*—Dr. J. H. AVELING calls attention (*Med. Times and Gaz.*, Jan. 22, 1859) to the fact that Fabricius Aquapendente, in 1647, gave all the reasons which are now being put forward for preferring the inorganic to the organic ligature. After describing the ligature of Fallopius, which was of thread, and like the one which we until lately have been using, and that of Guido, which was made of metal, and hooked the two lips of a wound together; he says that he provides himself with many flexible needles of iron or of brass, made soft, except at the point, over burning coals. These he passes through the lips of the wound, and then turns back the extremities, the right to the left and the left to the right, fitting them over the wound either straightly and plainly, or by making a knot and allowing them to remain until the wound is almost agglutinated.[1]

The following are the reasons Fabricius gave more than two hundred years ago for preferring his metal fibula to that of Fallopius, which was of thread:—

"Quod si licet aliquando paradoxum vobis afferre, dixero potius meam fibulam potiorem esse, propter rationes ex comparatione desumptas à juvantibus, et nocentibus, si quidem fibula Fallopii ex filo facta, mordet ubique carnem, quia filum asperum est, et inæquale, cum sit tortum, acus verò livigata est, et per-

[1] I think this plan of using needles might be returned to with advantage in some cases of wounds about the face.

polita. Rursus filum mordendo labia vulneris transversè ea perrodit, quod experientia passim patefacit, et confirmat; at acus flexibilis, cum rotunda sit, et levigata, nihil istiusmodi facit: exemplo sint annulli aurei, aut ferri, qui auribus perforatis diutisaime gestantur, utcumque penduli sint. Rursus si filum valentius stringatur, interdum rumpiter, quo non patitur acus mollis, ferrea, aut œnea. Amplius filum est materia, quæ facilè tenditur, et laxatur, ferrum verò flexibile neutiquam laxatur. Amplius laxitas ex filo dupliciter succedit, tum ex laxa fili natura, tum ex perrosis labiis, unde etsi à filo labia vulneris ad mutuum contactum adducuntur, non tamen adducta conservantur, quia propter fili naturam dupliciter laxantem disjunguntur, et hiant; sed neutram laxitatem ex acu flexibili rotunda, et perpolita expectare oportet. Ultimò filum non difficulter putrescit à sanie, et ichoribus, at acus ferrea, aut œnea, immunis est ab hujusmodi labe. Quod si tandem addatis, æs, et ferrum habere vim refrigerandi, et adstringendi, vulneris glutinationi consentaneum erit: et hoc est argumentum veritatem pardoxi omnino comprobans, et confirmans."[1]

These advantages may be summed up thus: 1. Iron does not eat into the flesh. 2. It does not ulcerate out. 3. It does not stretch and break. 4. It is not rotted by the discharge.

What more remains to be said than is here stated? Is it not curious that we are only just now beginning to appreciate the fact which Fabricius gave to the world so many years since?

—

28. *Perchloride of Iron in In-growing Nail.*—After fomentation, Dr. Alcantara interposes beneath the nail a small piece of lint, upon which some ointment of perchloride of iron has been spread. All the surface of the excrescence deprived of its epidermis is covered over with this, and the dressing is renewed twice a day. At the end of four days, the excrescence becomes dry and mummified, and is easily detached. The wound then assumes a healing aspect, and the case is completed at the end of a week—*Union Med.*, No. 16.

—

29. *Therapeutical Action of the Perchloride of Iron in the Treatment of Acute and Chronic Urethritis.*—Dr. Barudel, in his investigations upon the therapeutical employment of the perchloride of iron, found that this agent exercised a special influence on the genito-urinary mucous membranes, for, from the period when it was administered internally, the inflamed membranes were rapidly affected, and no longer secreted the abundant puriform fluids which accompany the inflammations of the genito-urinary tract. The perchloride appears to owe its efficacy to a double action, for it possesses a hæmostatic power which retains the blood in the capillary vessels, and opposes its escape, and also a sedative power which rapidly restores the functions of the capillary circulation to a regular mode of action. When the perchloride of iron was administered internally, Dr. Barudel found that it lowered the pulse from seventy to sixty, and even to fifty, in the minute, and he therefore was induced to employ it in many cases where it was essential to reduce vascular excitement. The duration of urethritis was certainly shortened by this medicine, and cases which ordinarily required a period of thirty or forty days for their cure were successfully terminated in eight or twelve under the use of the perchloride, which was administered internally in cases of acute and chronic blennorrhagia, and was also employed in the form of a styptic injection to the affected membrane. The employment of this treatment has never been attended, in the hands of Dr. Barudel, with any unfavourable results, so as to induce him to discontinue it, although, as is well known, a multitude of serious complications often spring up in the course of blennorrhagia.

In all the cases treated by Dr. Barudel, the treatment was identical, except in some rare instances. In acute urethritis, an injection of iodide of lead was employed, this salt being almost insoluble and exciting no pain in the inflamed mucous membrane; the solution of perchloride of iron in injections was reserved for chronic blennorrhagia, the constriction which it exercises upon the urethral canal rendering it more applicable to the chronic than the acute affections. The internal treatment of all the cases consisted exclusively in the administration of

[1] De Chirurgicis Operationibus, p. 146.

a mixture containing twenty drops of tincture of perchloride of iron, taken every two hours. In general, at the end of three days a certain improvement was effected; but no aggravation of the inflammatory condition of the parts was ever produced by this internal and external treatment, either in the acute or the chronic cases. The cure was almost always completed in fifteen days. In chronic urethritis, the only modification consisted in the use of an injection made of tincture of perchloride of iron and distilled water; this injection was repeated three times a day, taking care that the fluid should remain at least ten minutes in the urethra. The general treatment was of a strengthening nature, wine being allowed to the patients. Dr. Barudel quotes two cases, successfully treated in the military hospital at Lyons by the means just described, and he draws the following conclusions from his researches: 1. That perchloride of iron may be used successfully, both externally and internally, in the treatment of acute and chronic blennorrhagia; 2. That this agent is endowed with well-ascertained hæmostatic properties, and possesses also a sedative action on the general circulation; 3. That several venereal affections, which resist ordinary remedies, may be safely treated by the perchloride of iron; 4. That the perchloride, given both in acute and chronic cases, appears to act, in the great majority, as a specific; 5. That the perchloride of iron is sufficient in the treatment of simple urethritis; but that when the syphilitic element is associated with this disease, mercurials must likewise be employed; and 6. That the most important auxiliary to the internal use of iron is the employment of an injection, the iodide of lead being applicable to acute, and the perchloride of iron to chronic, urethritis.—*Brit. and For. Med. Chirurg. Rev.*, Jan. 1859, from *Bull. Gen. de Thérap.*, May, 1859.

30. *Injections in Gonorrhœa.*—Prof. SIGMUND, of Vienna, as the result of his extensive observation in this class of diseases, is decidedly in favour of the employment of injections in the treatment of gonorrhœa. He believes those who have derived no benefit from their use, or who have observed mischievous consequences from this, have, in the great majority of cases, employed them improperly. He has tried injections with balsam of copaiba, and with chloroform, but has given them up as unpractical, and those made with the patient's own urine, while taking balsam copaiba, were found to be as inert as water. From among a large number of substances tried, he confines himself now almost to sulphate of zinc, acetate of zinc or lead, alum, and tannin; and of these he prefers the sulphate of zinc to all others, because the great majority of patients are cured by it; it acts mildly, neither soiling the linen, nor changing the colour of the urine, and it is very cheap.

For injections to succeed they must be used at the proper time, in a suitable dose and manner, and they must be continued sufficiently long. The period for their employment has arrived as soon as the inflammation of the mucous membrane of the urethra has become subdued; but they should not be used as long as there is present considerable swelling, great, or even slight, if continuous, pain, spasms, or frequent calls to pass urine. The dose of the material should be small, as five grains to the ounce of extract of lead, one quarter of a grain of nitrate of silver, one grain of sulphate or acetate of zinc, etc. It is seldom necessary to increase the original dose. The addition of anodynes, as opium, hyoscyamus, etc., has no advantageous effect. We should carefully teach the patient how to use the injection; and a small tin syringe, with a conical tube, is to be preferred. It should hold at least two drachms. The patient should be placed in the upright position, and should pass urine prior to the injection being thrown in. The tube must be so passed into the urethra, that no fluid can flow out between the canal and the tube. The fluid is now to be slowly thrown in, and then the mouth of the urethra is to be kept closed by two fingers, so that nothing can pass out during two or three minutes. Two injections are to be thrown in one after the other, and they are to be repeated three or four times daily. The injections should not be thrown in just before going to sleep, as they then sometimes give rise to seminal discharges. They must be persevered in for eight or ten days, after all traces of diseased secretion have ceased to be visible, even in the morning. The average time required will be from twenty-one to

twenty-eight days. Internal means may also, if desired, be employed, and balsamic medicines, in many cases, hasten the cure.

Dr. Sigmund rarely has recourse to caustic injections, as the nitrate of silver, sulphate of copper, chloride of zinc, etc., because generally the experiment is dangerous. He limits their use to simple, uncomplicated gleet, which has resisted the usual means, as also to recent gonorrhœa without inflammation occurring in persons who have already employed the treatment with advantage.—*Schmidt's Jahrb.*, bd. xcviii. p. 49.

—

31. *Suffocation from Foreign Body in Rima Glottidis.*—Mr. G. H. Porter presented to the Surgical Society of Ireland in 1856, a pathological specimen, which afforded an example of a piece of boiled mutton blocking up the rima glottidis. Recently (Jan. 20th), he presented a similar specimen, obtained from a man who dropped suddenly from his chair whilst eating his dinner, and struggled for about two minutes, when life became extinct. He was at the time intoxicated. When seen by Mr. P. the man's face was almost purple; lividity was well marked over the surface, particularly on the posterior aspect. On examination, he found that death had been caused by the plugging up of the rima glottidis by a large piece of mutton, which produced suffocation. His lungs and head were congested, and also the lining membrane of the trachea. He believed some surgeons were of opinion, that the way suffocation was produced, in such cases, was by the shutting down of the epiglottis. It had fallen to his lot to examine seven cases in which death was produced from suffocation in this way, and he only found the foreign body lying on the epiglottis in one. In all the others it was found plugging up the rima glottidis, as in this case—in two, the foreign bodies were large pieces of mutton; in three, they were large pieces of boiled beef; and in another, there was a large piece of bacon. The seventh was one in which the whole trachea was filled with a quantity of meat and vegetables—he could not tell the description of meat. It was rather a curious case. The man became suffocated from vomiting; the contents of the stomach having fallen back while he was in the act of vomiting, and filled up the windpipe. In six of the cases the parties were all in a state of intoxication when they met their death.—*Dublin Med. Press*, Feb. 9, 1859.

—

32. *Descent of a Testis in a Child, simulating Hernia.*—Mr. R. P. Bell relates (*British Med. Journ.*, Feb. 5, 1859) the following case, illustrative of the necessity of carefulness in diagnosis.

A fine healthy child, fifteen months old, was brought to Mr. B. by its mother, who supposed it to be suffering from a rupture, which had occurred a few minutes previously, whilst the child was standing on a sofa, when it suddenly screamed, and placed its hand on the body.

On examination, Mr. B. saw a protrusion, of the size of a walnut, at the right external abdominal ring, and found that the scrotum contained only one testicle. He explained the nature of the case, and merely ordered fomentation.

On calling to see his little patient two hours afterwards, he found him comfortably asleep, and the testis had completed its descent. The parents were not aware of the previous defect.

—

33. *Encephaloid Cancer affecting a Testicle which had been retained in the Abdomen.*—Dr. G. Johnson read an account of a case of this before the Royal Med. and Chirurg. Soc. (Jan. 11, 1859), which was peculiar from the severe pain which accompanied the disease in its early stages, and the great size of the tumour.

The subject of it was a well-developed, muscular man, 27 years of age, of active habits. The disease, which ultimately caused death, appears to have commenced about the month of September, 1857. At that time, while out shooting, an uneasiness low down on the right side of the belly, which had been felt for a short time before, grew into such intolerable agony that he had "to knock up" for two hours. The pain then went off, and he finished the day's sport. From that time the pain was more or less constant and severe, and on several occasions, greatly aggravated by active exercise. Dr. Johnson was first

consulted by letter in April, 1858. The description of the pain, and its situation in the course of the right ureter, suggested the notion that a calculus might be impacted in the ureter. Some questions relating to the effect of the pain upon the testicle elicited the fact that the right testicle had not descended from the abdomen. A careful examination, on the 17th of April, failed to discover any tumour in the right inguinal or iliac region. The patient's general health and nutrition were at this time but little affected. The urine was of high density, and deposited lithates and oxalates, but contained no other abnormal products. The pain continued, and the patient began to lose flesh and strength. It now occurred to Dr. Johnson, as a probable explanation of the symptoms, that the retained right testicle had become the seat of malignant disease. The patient's mother had died of cancer of the stomach. On the 12th of June, there was a consultation with Dr. Bright. At that time, there was decided evidence of a tumour or deposit in the abdomen above Poupart's ligament, on the right side. The tumour rapidly increased, until it extended much beyond the median line of the abdomen, above the umbilicus, and even to the epigastrium. The patient meanwhile became much emaciated, and died exhausted on the 7th of July. On post-mortem examination, the right testicle, situated in the abdomen, was found to be the seat of medullary disease, forming a tumour weighing sixteen pounds, even after the escape of about four pints of grumous fluid from some large cyst which had become developed in it. The lymphatic glands in the abdomen were free from disease.—*Med. Times and Gaz.*, Jan. 22, 1859.

OPHTHALMOLOGY.

34. *Iridesis: or the Formation of Artificial Pupil by tying the Iris.* By Mr. CRITCHETT.—The formation of what is commonly called an artificial pupil is required under various morbid or abnormal conditions of the eye, and demands a corresponding variety in the modes by which it is accomplished. In some cases, a restoration of the original pupil as regards size and situation is all that is wanted; in others, a change in the size, shape, and situation of the natural pupil is required; or, again, it may be necessary to form a new pupil in an abnormal situation, and in the very substance or tissue of the iris. In each of these different cases the object is the same, viz., to establish a clear pupil or aperture in the iris opposite to a transparent part of the cornea.

It is very desirable that, in the formation of an artificial pupil, the conditions upon which the perfection of the natural pupil depends, should be as nearly as possible preserved and imitated, both as regards its position and defined border, its size, mobility, and sensitiveness to light. In the methods usually employed, these conditions are frequently unattainable, and the circular fibres of the natural pupil are either cut or torn through, and an opening is formed which is very probably large and irregular in shape, fixed and insensible to light, ill defined and extending to the margin of the cornea—thus admitting rays of light that are too much refracted by the margin of the lens, and having the effect altogether of confusion of vision.

A consideration of the disadvantages attending the usual modes of operating for artificial pupil makes it obvious that it is desirable to produce a prolapse of the marginal or ciliary part of the iris, and thus to gain the power of altering the shape and size of the natural pupil in any direction, and to any degree that the specialties of the case may need. Up to the present time, this object has been attended with insurmountable difficulties. If an opening in the cornea is made, and a portion of the iris drawn out so as to form a small prolapse, this will almost invariably recede when the aqueous humor is resecreted; if its return is prevented by making the wound larger, and removing a small portion of the cornea, the prolapse may then exceed the intended limits, and the transparency and natural curve of the cornea is interfered with. These considerations have suggested to me the idea of placing a piece of fine silk round the prolapsed por-

tion of the iris—an operation to which I propose to apply the term Iridesis (Ιρις—δεσις). It is performed in the following manner: The patient, if at all restless, being placed under the influence of chloroform, the wire speculum is inserted, and, with a pair of forceps, a small fold of the conjunctiva close to the cornea is held so as to fix the eye. An opening is then made with a broad needle through the margin of the cornea, *close* to the sclerotic, and just of sufficient size to admit the canula forceps; with it a small portion of the iris, near, but not close to, its ciliary attachment, is seized and drawn out to the extent considered necessary to enlarge the pupil; a piece of fine floss silk, previously tied in a small loop round the canula forceps, is slipped down and carefully tightened around the portion of the iris made to prolapse, so as to include and strangulate it. This manœuvre requires a little practice and dexterity, and is best accomplished by holding each end of the silk with a pair of small forceps with broad extremities, bringing them exactly to the place where the knot is to be tied, and then drawing it moderately tight. A single tie is sufficient; the ends are then cut off, and the operation is complete. Little or no irritation usually follows. The small portion of iris included in the ligature speedily shrinks, leaving the little loop of silk, which may be removed from the eye about the second day. This operation has been performed many times by myself, and by my colleagues, Mr. Bowman and Mr. Poland, and the result has been in every respect most satisfactory; the size, form, and direction of the pupil can be regulated to a nicety; its mobility is preserved, and the eye speedily recovers from the effects of the operation. It is applicable to numerous groups of cases, including all those in which the natural pupil, or even a part of the natural pupil, is movable, and has a free edge. The simplest class of cases to which this operation is suitable, is a central defined opacity of the cornea, in which cases it is only required that the natural pupil should be moved slightly to one side, so as to bring it opposite to the transparent part of the cornea. By tying the iris in such a case, the defined edge and the natural contractility of the normal pupil are secured; but if the opacity is very large, and only a small margin of transparent cornea is left, the operation is not applicable. Another class of cases in which this method of proceeding may be employed, is a dense opacity of the cornea, the result of penetrating ulcer, with partial adhesion of the pupillary margin of the iris. In these cases the pupil is altered, both in size and shape, to a variable degree, and is drawn behind the corneal opacity, and in this way any useful vision is prevented. I have operated upon several of these cases by the new method, and have found that I could thus regulate the size of the displaced pupil, and preserve intact the circular fibres of the iris. It is comparatively easy, when the adhesion is slight, and only a small portion of the original pupil is implicated in the synechia, but when there has been a large penetrating ulcer involving the pupil, and thereby considerably diminishing its size, and sometimes reducing it to a mere slit, the difficulty of obtaining a useful pupil by iridesis is increased. In a case of this kind that came under my care a few weeks ago, I succeeded in obtaining a good central and movable pupil by making two openings in the cornea, about three lines distant from each other, and then drawing out and tying a small portion at each opening. The effect of this mode of proceeding was to stretch the circular fibres in two directions, so as to form a somewhat triangular pupil—movable, clearly defined and allowing of excellent sight.

I may mention, particularly, another case, as it seems to deserve special notice, partly on account of the very singular condition of parts before the operation, and also because the method adopted for its relief—viz., that of tying the iris—was the only one applicable to the case, and was very successful. A young lady, about twenty years of age, came to consult me respecting her right eye, the sight of which was very defective, particularly in a strong light. It appeared that she had suffered severely from inflammation of the eye during infancy. On examination, I found the cicatrices of two penetrating ulcers at opposite parts of the cornea, and at its extreme margin prolapse of the iris had occurred at each cicatrix, so that the pupil was reduced to a central narrow slit, which all but closed when the eye was exposed to a strong light. The effect of the operation was to restore excellent vision, and very much to improve the appearance

of the eye; the pupil being now nearly circular and *movable*. I should not have ventured to operate in this case unless I could have *exactly regulated the size of the pupil, and preserved the circular fibres of the iris*, and I feel satisfied that this twofold object could not have been attained in any other way than by *Iridesis*.

I have applied the same method in cases in which it has been desirable that the pupil should be brought close to the margin of the cornea. Instead of drawing out a portion of the iris, and either cutting it off or leaving it in the wound, according to the usual methods, I have tied it, in these cases, close to the margin of the wound in the cornea. This has the twofold advantage of keeping the edges of the artificial pupil secured and clearly defined, not only at the time of the operation, but permanently; and also of destroying the prolapsed portion of iris, and thereby preventing it from becoming a source of irritation.

I may just mention here that this method of operating has been adopted by my friend, Mr. Bowman, in some cases of conical cornea, for the purpose of *converting the pupil into a narrow slit*. It perfectly succeeded in effecting the desired object, and I think it may be safely affirmed that this could not have been efficiently performed in any other way.

The operation that I have endeavoured to describe in this paper has now been performed in twenty-seven cases. In no instance has it been productive of any serious amount of irritation, or failed to effect the desired object in a very perfect and efficient manner, and I venture to express my hope and belief that it will prove a useful addition to ophthalmic surgery.—*Ophthalmic Hospital Reports, and Journal of the Royal London Ophthalmic Hospital*, Oct. 1858.

---

35. *Staphyloma of the Cornea.*—Mr. RICHARDSON exhibited to the Surgical Society of Ireland (Jan. 16, 1858), a specimen of staphyloma of the cornea, with the view of showing its minute structure.

"The designation staphyloma," he remarked, "has been indiscriminately given to a variety of prominences on the surface of the eyeball; but, as Dr. Wharton Jones remarks, the name staphyloma was originally given to that projection which 'occupies the place of the cornea, and is, according to the opinion of all writers' (these observations were made several years since, *Med. Gaz.*, 1837), 'the cornea itself degenerated and distended, together with the iris, which has become adherent to it throughout its whole extent; the anterior chamber being, of course, annihilated.' In order, says Mr. Lawrence, 'that the state of staphyloma should be produced, there must be severe inflammation of the eye, involving the entire cornea, and rendering its texture opaque; that inflammation must also have extended to the iris, and caused it to adhere to the cornea; and there must be increased secretion of the aqueous humour to push these unnaturally connected structures forwards.' Mr. Wardrop does not seem to have agreed to this explanation, for he says 'that staphyloma never occurs unless the cornea has been previously ulcerated, and unless the ulcer has penetrated into the cavity of the aqueous humour and destroyed the cornea as deep as the internal tunic.' It would have been nearer the truth, Mr. Jones observes, if he had said 'that staphyloma never occurs without more or less extensive destruction of the cornea.' I now come to Mr. Jones's mode of accounting for the disease; an explanation which, judging from a very careful examination of the preparation here this evening, seems to me most accurate. 'If,' he writes, 'in scrofulous, catarrhal, or catarrho-rheumatic ophthalmia, there be a penetrating ulcer of the cornea, the aqueous humour escapes, the iris falls forward into contact with the cornea, and a small part of it is, perhaps, prolapsed through the ulcerated opening. The progress of the ulceration being stopped by the yielding of the inflammation, the prolapsed portion of the iris, and the ulcerated part of the cornea, are involved in one cicatrice. The opening in the cornea being thus closed, the aqueous humour again collects, and the anterior chamber is restored, though somewhat diminished in consequence of the partial adhesion between the iris and cornea. There is no prominent distension of the front of the eye in this case, because, as the inflammation subsides, the small protruded portion of iris shrinks and flattens; but'—and here I beg the particular attention of the society—'if the destruction of the cornea has gone on further, either by ulceration or the giving

way of an onyx, and considerably more of the iris has protruded, the prolapsed portion of the iris does not shrink when the inflammation begins to abate, as in the former case, but remains, and forms a projection at one part of the cornea, generally the lower or lateral. This projection is at first merely a bag of the iris distended by the aqueous humour; but, by and by, its surface becomes covered by an opaque firm tissue, of the nature of the tissue of cicatrices, and this tissue is incorporated at the base of the tumour with the sound cornea.' This, as he further observes, 'is not a distension of the cornea itself, but a protruded portion of the iris covered by a *new tissue*, intending to supply the loss of the substance which the cornea has sustained. The mode of origin of a *total* staphyloma is essentially the same, but differs only in degree.' The whole or greater part of the cornea being destroyed, the iris falls forward, the pupil becomes closed, and, the aqueous humour being thus allowed to accumulate in the posterior chamber, the iris is kept distended in the form of a tumour on the front of the eye. Its surface generally gets covered with an opaque cicatrice-like tissue, or pseudo-cornea, which assumes a greater or less degree of thickness, and a total staphyloma is the result.' The tissue, then, according to this writer, is not degenerated and opaque cornea, but a *new tissue*, developed on the surface of the iris exposed by the destruction of the cornea itself. The more recent investigations of Mr. Bowman appear to have supported Mr. Jones's views on this question; and he, in addition, states 'that the new material becomes covered with an epithelium continuous with the conjunctival, just as an ulcer of the skin acquires an investment of the cuticle as it heals.'

"Having, as I have just mentioned, made a most careful examination of the staphyloma before us, I could not avoid the conclusion that it is altogether a *new structure*, and confirms the views of both Mr. Jones and Mr. Bowman. We have in it no trace of the true cornea; both elastic laminæ have likewise disappeared, and we have substituted a *fibro-areolated* tissue, covered by a thick layer of epithelium, composed of several strata of cells, resembling very much a section of epiphisary cartilage."—*Dublin Med. Press*, Jan. 27, 1858.

MIDWIFERY.

36. *Abolition of Craniotomy from Obstetric Practice.*—Dr. Tyler Smith read (Feb. 2, 1859) an interesting paper on this subject before the Obstetrical Society of London, a society very recently formed.

In this paper the author shows that craniotomy is resorted to in British practice about once in every 340 labours. The whole number of births in England and Wales exceeds 600,000 per annum; and if we apply the proportion of 1 in 340 to these figures, we get a total of about 1800 cases of craniotomy per annum. This is as though every year all the children born in London during rather more than one week were sacrificed; or as though all the children produced during the year in such a county as Westmoreland were born dead. The mortality to the mother from this operation is nearly 1 in 5, in British practice, which would give in England and Wales a maternal mortality of between 300 and 400 per annum. Craniotomy is performed about twice as often in British as in French practice, and four times as often in this country as it is in Germany. It is an obvious fact that every improvement which has ever been made in obstetrics has tended to restrict and diminish the cases and conditions in which the performance of craniotomy has been resorted to. It is the author's object to show that, with the proper and scientific use of all the means at our command, it may be laid down as a general rule, that craniotomy should not be performed in the case of a living fœtus after the period of viability has been reached. It is certain that, up to the present time, the measures which are the alternatives of craniotomy have never been carried out in practice to their full and legitimate extent. Turning was the first great obstetric operation which checked the voluntary destruction of the fœtus during labour. The objections

to turning which some obstetrists entertain depend on an almost superstitious fear of the uterus—a fear mainly owing to ignorance of the nature of the organ, and of the laws under which it acts. The dread of introducing the hand into the uterus has prevailed almost universally. But, apart from the danger of infection, the hand of the accoucheur, properly guided, can do no more harm in the uterus than any portion of the fœtus of equal bulk. Restrictions of the most absurd kind have been laid upon the operation, and it has come to be almost limited to arm presentations and cases of placenta prævia. On the continent, turning is the recognized practice in cases of difficulty, where the head is above the brim, beyond the reach of the forceps, when the os uteri is in such a state as to admit the hand, and when no serious distortion of the pelvis exists. The operation of turning in cases of moderate pelvic deformity was practised by Denman, but it was dealt with rather as an exception than a rule of practice until the matter was taken up by Professor Simpson. No unprejudiced person can read Dr. Simpson's papers on this subject without coming to the conclusion that turning may be performed in cases of moderate pelvic distortion at the full term, with comparative safety to the mother, and with a reasonable chance of safety to the child. It is also shown to be applicable to cases of greater deformity, in combination with the induction of premature delivery. Nothing has ever occurred in the history of turning which has so strongly tended to enlarge its usefulness as the introduction of anæsthesia into obstetric practice. Under chloroform we can turn with comparative ease in cases of excessive sensibility of the os uteri and vagina, in arm cases in which the waters have been long expelled, and the uterus has closed upon the fœtus with spasmodic force. It renders turning practicable in cases of convulsions or maniacal excitement, and in all instances it makes the uterus comparatively quiescent, and thus averts the dangers depending on contraction and resistance during the operation. Turning is performed nearly three times as often in France and Germany as it is in this country. After turning, the next great step in opposition to craniotomy was the discovery of the forceps. Before the time of Chamberlain, whenever turning was impracticable, there was no resource in cases of difficulty except in craniotomy. But it may fairly be questioned whether the whole powers of this instrument have ever been fairly brought out, especially in this, the country in which it was produced. If we examine our standard works, we find more pains taken to show when this instrument is not to be used than when it may be. The cases in which the forceps may be used are those of moderate disproportion or distortion, whether the arrest is at the brim, in the cavity, or at the outlet of the pelvis; cases of arrest from failure of the labour pains, without any morbid condition of the parturient canal; cases of convulsions in which the os uteri is dilated, and the head sufficiently low to be within reach of the instrument; cases of occipito-posterior presentation, not otherwise admitting of rectification, and face presentations; cases of accidental hemorrhage; and cases of rupture of the uterus, in which no great recession of the head has taken place. It should also be used at a comparatively early period in many of the cases which, if not assisted, run on to impaction from swelling of the fœtal head and tumefaction of the soft parts of the mother. The outlet and middle straits of the pelvis are the limits within which the short forceps should be used; at the brim the long forceps is the proper instrument. The forceps is used more than twice as often in France and Germany as it is in this country. The last, and it may truly be said the greatest, opponent of craniotomy is the induction of premature labour. The largest single source of craniotomy is deformity of the pelvis. Now, it may be asserted, without the possibility of contradiction, that in this great mass of cases, it would be right and practicable at once and forever to abolish craniotomy in the case of the living and viable fœtus. In all cases of known deformity, an examination should be made in the early or middle months of pregnancy, and the proper treatment of such cases should be the induction of abortion or of premature delivery. In cases of excessive distortion, where it would be altogether impossible for a viable fœtus to pass, abortion should be induced before the time of quickening. It would be quite impossible for intercourse and impregnation to take place in any case in which it would not also be possible to induce abortion with safety to the mother. In the very considerable number of cases

of moderate distortion in which the diminished capacity impedes delivery at the full term, but would allow of the passage of a child at the seventh or eighth month with a chance of living, the introduction of premature labour is the only justifiable practice. Besides the great operations of turning, the forceps, and the induction of premature labour, there are other means by which, in special cases, the necessity for craniotomy may be superseded. One of the most simple is the rectification of occipito-posterior presentations. When the occiput descends towards the sacrum in the third and fourth positions, instead of turning towards the right or left acetabula, great difficulty is produced, particularly in first labours, or when the head is large. Recorded cases of craniotomy show that the want of this rectification, which is generally possible with the hand, the lever, or the forceps, often leads to perforation. Cases of hydrocephalus in the fœtus are among the most difficult to deal with in an attempt to abolish craniotomy; but here we have the proposal of Dr. Simpson to tap the hydrocephalic head, and in this way reduce it so as to allow of delivery without the destruction of the fœtus. In actual occlusion or insuperable rigidity of the os uteri, incision is a safer and better practice than craniotomy. While it is the object of the present paper to advocate the abolition of craniotomy in the case of the living and viable fœtus, there is undoubtedly a class of cases in which perforation be practised beneficially, namely, in labours where the child has died during the course of parturition. No woman should be allowed to remain in difficult labour after the death of the child has been satisfactorily ascertained. Considering, then, the various means at our disposal in the way of preventing the necessity for craniotomy, the author unhesitatingly expresses his conviction that, as a rule of practice, craniotomy in the case of the living and viable fœtus should be abolished; and he believes that if all the resources of obstetrics in the way of prevention, management, and alternative treatment were properly wielded, the necessity for the operation would not arise.—*Medical Times and Gazette*, Feb. 12, 1859.

—

37. *On the Indications for the Application of the Forceps.*—By Dr. Spiegelberg. Among the indications those derived from the insufficiency of pains are the most frequently assigned, and the most liable to give rise to errors in practice. The head remains at the floor of the pelvis, the pains, though more or less strong, being insufficient in the individual case to expel it beyond the external genitals. The patience of the accoucheur becoming exhausted (much sooner indeed than that of the woman), he has resort to instruments in order to terminate the labour. That such a procedure, common as it is, cannot be justified, scarcely requires to be said.

Much more frequent in occurrence than these examples of actual insufficiency of pain (which the author has always found at this stage of labour, especially in primiparæ, a very rare circumstance) are the cases in which the head, in spite of strong pains, remains at the floor of the pelvis, and although pressed down by every contraction towards the mouth of the vagina never distends the perineum. Well aware of the impropriety of too early or of useless operative interference, at the beginning of his practice, Dr. Spiegelberg contented himself in these cases with temporizing and pain-increasing measures, too often, however, with the result of still having to employ the forceps at last, as it seldom happened that the pains alone proved sufficient. Under these circumstances, a large proportion of the children were stillborn. Taught by this experience, he afterwards in such cases resorted to the forceps earlier, and was, as regards the children, much more fortunate. He was also exceedingly surprised at the ease with which the head, apparently so firmly fixed, was extracted. Traction was scarcely required at all, a suitable adjustment of the instrument and a few lateral pendulum-like movements commonly sufficing to effect the delivery. Sometimes all was completed with one hand, the other supporting the perineum. While in those cases in which the ergot had been used to effect the propulsion, retention of urine, erosions, and inflammation of the vagina or vulva were met with, no such occurrences followed the use of the forceps. The cause, which in these cases prevents good pains proving effective, and renders a forceps operation so easy of execution, is a purely mechanical one—arising from the too great flexure

of the head upon the chest. The face is turned towards the coccyx, the vertex rests on the perineum, and the occiput lies under the symphysis at the mouth of the vagina. The uterus, acting upon the trunk of the child, forces the occiput by means of the vertebral column, deeper every pain, pressing the chin more forcibly towards the chest. For the birth of the child, however, it is necessary that the neck should be stretched out so as to raise the head from the chest. The contractions of the perineal muscles, especially the levator ani, which, as well as those of the abdomen, are in a state of voluntary or of reflex activity, force the cranium still further upwards and backwards, *i. e.* towards the chest. The pains, however, increased in severity, prove useless, and the operation of the forceps is easily explained. When the blades are passed in at the sides of the head in the direction of the prolongation of the axis of the outlet of the pelvis, they remove the chin from the chest, stretch out the neck, and terminate the delivery at once. The head had already been forced through the pelvis, and the forceps has only to conduct it over the perineum. They do not act by traction, but as a lever or instrument for bettering the position. They must be passed up slowly, or the perineum may be injured. What is here stated has been but little observed, and as far as Dr. Spiegelberg is aware, Cazeaux is the only author who has clearly set it forth. If this excessive flexure of the head does not furnish the indication in nine out of ten forceps operations as stated by Cazeaux, at least it is the most frequent cause of their employment, and places this in the most favourable light. Just as weakness of pains is a rare, so is this condition a frequent indication. Dr. Spiegelberg hopes that this communication may not be interpreted into a recommendation to have recourse hastily or uselessly to operations. But he adds that some of the worst consequences result from abstaining from operations when solid indications for interference present themselves; and that skill in employing his instruments is of even less importance to the obstetrician than the power of detecting the cases which justify his resorting to them.—*Med. Times and Gaz.*, March 5, 1859, from *Monatschrift für Geburtsk.*, Bd. xi.

38. *Scarlatina after Parturition.*—Dr. MCCLINTOCK read a paper before the Association of the Fellows and Licentiates of the King's and Queen's College of Physicians in Ireland (Feb. 2, 1859), on the occurrence of scarlatina within eight days after confinement. The mortality in such cases has been put down as two out of three, or over sixty-six per cent. Of twenty-eight patients treated in the Rotunda Hospital, seven died, or about twenty-five per cent. Dr. McClintock considered the advent of this exanthem supervening on delivery one of the most fatal complications of the puerperal state. The earlier the appearance of the rash, the more fatal; the same rule having applied to puerperal fever, whilst epidemic in this city, in 1854 and 1855. He referred to the peculiar acceleration of the pulse in these cases, to the eruption being occasionally tardy in evincing itself; and as regards the treatment, his experience leads him to attach great importance to the early exhibition of stimulants in these cases. —*Dublin Hospital Gazette*, Feb. 15, 1859.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

39. *On Arsenical Paper-Hangings. The mode in which they may produce noxious effects.* By ALFRED S. TAYLOR, M. D.—A friend, whose library walls were covered with an arsenical-green paper, had suffered for some time from chronic inflammation of the eyes, especially affecting the conjunctivæ of the eyelids. On the discovery that arsenic was contained in the green pigment of this paper in rather large quantity, he caused it to be removed during the summer and replaced by another containing no arsenic. The inflammation from which he had suffered disappeared; but within the last few weeks it has returned. He informed me that he had been dusting some books in a bookcase belonging

to this room, and he imagined that the dust, which had accumulated for two or three years, had affected his eyes, and had caused a return of the inflammation. Some of the dust was carefully removed on Tuesday last from the tops of a few books by a feather, and submitted to a chemical analysis. The dust weighed one grain and a half: it had an olive-green colour, and under the microscope it presented the appearance of fibres, with numerous particles of various colours, chiefly of a grayish black. By Reinsch's process, a portion of the dust yielded a deposit of arsenic; and there was, therefore, clear evidence that some of the mineral arsenical pigment formerly on the walls, had found its way through the glass-doors of the bookcase, and had been deposited in the form of a fine dust on the tops of the books.

On Thursday last, after having made this chemical examination of the dust from a private dwelling, I procured from the shop of Messrs. Marratt and Short, Opticians, 63 King William Street, London-bridge, a quantity of dust for the purposes of analysis. The walls of this shop are covered with an unglazed arsenical paper; and, as I am informed, they have been so covered for a period of about three years. In collecting this dust from the tops of the cases containing the instruments, great care was taken not to touch the walls. The quantity thus collected for examination amounted to about four hundred and fifty grains. It was nearly black, and under the microscope appeared to consist of fibres and sooty particles. It was very light and flocculent. One hundred and fifty grains of this dust were examined by Reinsch's process; and enough metallic arsenic was obtained from it to coat about ten square inches of copper foil, in addition to a piece of copper gauze. From the latter deposit, by the application of heat, octahedral crystals of arsenic were readily obtained. The cases had not been dusted for a period of nine months.

The cases are secured by glass doors, and lined inside at the back with arsenical paper. Mr. Short removed, by a camel's hair pencil, a small quantity of dust which had accumulated on the thermometers and barometers, which are locked up within the closet. The quantity thus obtained from the projecting parts of a few instruments, amounted to eight-tenths of a grain, of which five-tenths were taken for examination. This half grain of dust sufficed to cover pretty thickly with metallic arsenic a square inch of copper gauze. A portion of this, when heated, yielded a large number of well-defined octahedral crystals of arsenious acid.

These facts lead to the inevitable inference that the air of a room, of which the walls are covered with an unglazed arsenical-green paper, is liable to be charged with the fine dust of the poisonous aceto-arsenite of copper. Those who inhabit these rooms are exposed to breathe the dust. The poison may thus find its way by the pulmonary membrane into the system, or it may affect the eyes, nose, and throat by local action. That so few cases of actual poisoning under these circumstances have occurred, is a fortunate circumstance; but only cases of serious mischief would be likely to attract attention. There may have been numerous instances of a disturbance of health, depending on this arsenical paper, which from absence of suspicion has been assigned to other causes. The degree of exposure, state of health, peculiar susceptibility, and the eliminating power of the system, may account for the comparative rareness of these cases. The mode in which the pigment is laid on the paper may be such as to prevent, in some instances, the fine particles of dust from escaping. The fact now demonstrated, that arsenical dust is, and must be substantially breathed by those who occupy rooms thus papered, explains the similarity of symptoms observed; justifies the statements made by Dr. Hinds, Dr. Halley, and others; and proves that those who have experimented on this subject with negative results, have not taken the right course to arrive at the truth. Their results have, to a certain extent, misled the public, by teaching them to rely on what is now proved to be a false security.

If, as a general rule, the quantity of arsenic which can penetrate the body from this source is small, it is still desirable that arsenic should not be breathed day by day in any proportion. The defenders of this noxious manufacture will hardly go the length of asserting that this arsenical-green, which is a potent poison in the stomach, can exert no injurious effect when taken into the lungs;

and yet, unless this assumption be made, the inevitable inference is, that these papers should not be used for covering the walls of our dwellings.—*Med. Times and Gaz.*, Jan. 1, 1859.

40. *Pharmacology and Toxicology of the Ranunculaceæ.* By Prof. CLARUS, of Leipzig.—Most of the Ranunculaceæ indigenous to Germany are distinguished by an acrid burning taste, and on this account, and from their injurious effects upon cattle when fresh, they are considered to be poisonous. The Ranunculus sceleratus, R. flammula, and R. acris, and the Pulsatilla pratensis and P. vulgaris, may be regarded as being endowed with the most acrid properties. The fact that the true Ranunculi lose their acrid taste by drying, while the Pulsatillas retain their active principles, leads to the belief that while the poisonous properties of the former are due to the presence of a volatile principle, dissipated by drying, those of Pulsatilla depend upon the presence of the same volatile principle, together with other acrid and narcotic substances. Dr. Clarus has ascertained that the narcotic principle of the Pulsatillas is *anemonin*, and the acrid principle is a resin with an acid reaction, while the acrid principle common to the Ranunculus sceleratus and Pulsatilla pratensis is a volatile oil.

From chemical experiments on the Ranunculaceæ and the administration of the products to the lower animals, Dr. Clarus has arrived at the following conclusions: 1. The Ranunculus sceleratus, and probably the rest of the Ranunculi, belong to the class of narcotico-acrids, inasmuch as they induce inflammation of the stomach and bowels, and irritation of the kidneys, and they diminish the number of the pulse and of the respirations. 2. The acrid principle of the Ranunculus sceleratus is a volatile oil, soluble in ether, of a very pungent taste and smell, which probably becomes decomposed, by keeping in close vessels, into inert anemonic acid and the narcotic principle, anemonin. 3. The narcotic principle of Ranunculus sceleratus is anemonin; it exists in this plant in much smaller proportion than in Pulsatilla pratensis, and hence the narcotic effects, such as diminution of the pulse and of the respirations, and palsy of the extremities, are less marked than in Pulsatilla, while the acrid effects, such as inflammation of the stomach and bowels and hyperæmia of the kidneys, preponderate. 4. The resin from the Ranunculus sceleratus is almost inert, and produces only a slight increase of diuresis. 5. Pulsatilla pratensis probably belongs to the class of narcotico-acrids, since it acts as an irritant to the skin, the gastro-intestinal tube, and the kidneys, and paralyzes the medulla oblongata, the spinal cord, and the sympathetic system. 6. The narcotic operation (stupor, palsy of the extremities, slow pulse and breathing) depends upon the anemonin, and the irritant effects on the skin, intestinal canal, and kidneys, depend upon two acrid principles, one of which is an acid, fixed resin, and the other is a volatile oil, analogous in every respect to oil of Ranunculus. 7. Like the oil of Ranunculus, the oil of Pulsatilla is decomposed in close vessels into anemonic acid and anemonin. The plant loses by drying that part of its efficacy which depends upon the presence of the volatile oil, but it retains its narcotic powers, which depend upon anemonin, and a part of its acridity due to the acid resin. 8. The freshly-pressed juice of the Pulsatilla and of the Ranunculus sceleratus combines all the narcotic and acrid powers of both plants. 9. The two plants now examined are very analogous to one another in respect to the quality of their active principles, since they both contain anemonin, volatile oil and a resin. In the Ranunculus sceleratus, the irritant principle prevails over the narcotic principle, but in Pulsatilla pratensis, the narcotic prevails over the irritant, and this difference is due to the varying proportion of anemonin in the two plants.—*Brit. and For. Med. Chirurg. Rev.*, Jan. 1859, from *Zeitsch. der Gesellschaft der Aerzte zu Wien*, Aug. 16, 1858.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Case of supposed Poisoning by Strychnia. By W. S. KING, M. D., Surgeon U. S. A.—On the 1st of January, 1859, at 5 P. M., I was sent for to see Thomas D——, aged 21 years, of good family and of active and energetic habits. I learned from his mother that he had left his home, perfectly well, about 2 P. M., and at 4 P. M. was found in a state of insensibility, in the erect position, holding on,[1] with the grip of a dead man, to a post in front of a Mexican house of a low character near the Military Plaza in San Antonio, Texas. He was carried into a house near by, a carriage was sent for, and he was brought home. I found him in bed, insensible; extremities rather cold; eyes half open, pupils dilated; breathing natural, without stertor, as if in a deep sleep; and jaws immovably fixed, as in tetanus. The patient could not be aroused, although pinched severely; and on the extremities being pricked with pins, manifested no sensibility whatever. Presuming, from the symptoms and from inquiries, that he had been drugged by strychnia in a drinking-store, an attempt was made to administer an emetic; but, owing to the obstinate closure of the jaws, which could not be overcome by any force used, and being requested by his mother to desist for fear of breaking his teeth, it was abandoned. An emetic was poured between the lips and teeth, but no deglutition was effected. Ordered the feet and legs to be put in a hot mustard-bath; afterwards sinapisms to ankles and epigastrium, and stimulating frictions, with ol. tiglii, along the spine and nervous centres. A stimulating enema was also directed. In addition to the symptoms already mentioned, there was also a constant twitching of the upper eyelids and jerking of the right arm. At 11 P. M. these last symptoms subsided; in other respects he was the same, except that he was more restless; had got up and walked firmly across the room, and sat down on a trunk. On being placed again on the bed, he tossed his limbs about, and persistently covered his head whenever a wet cloth was applied or it was touched by the hand. A few drops of diluted croton oil were dropped on his teeth, but none swallowed; jaws closed as firmly as ever; the pupils more dilated than when first seen. This was his condition when left at 12 o'clock at night. Called on the morning of the 2d, at 10 A. M. The eyes were now closed; jaws less rigid, but could not be opened; appeared to be in a deep sleep, and still unconscious; pulse and heat of skin natural. When the extremities were pinched, he withdrew them. Presuming that the danger was past, and all attempts to administer medicine by the mouth having again failed, he was left for the present. Returned at 4½ P. M., and found him better, and conscious. His father, who is a physician, informed me that half an hour previous—*exactly* twenty-four hours from the seizure—he had awoke, and had swallowed two tablespoonfuls of soup. He was out the following day, and stated that he had no recollection of any event of the 1st of January, subsequent to his riding out a little before 4 P. M., until he awoke, twenty hours after. He has never had a fit or sickness of any kind in his life before.

Dr. Kuppell, a very intelligent physician of San Antonio, who was called

[1] "*Como muerte*" was the language used by the Mexican woman who found him.

in by the family before sending for me, agrees with me in the opinion that the young man had drank liquor drugged by strychnia, though not in sufficient quantity to destroy life. I am unable to explain the symptoms satisfactorily on any other supposition.

FORT DUNCAN, Eagle Pass, Texas, Feb. 9, 1859.

Inhalation of Chloroform in Intermittents. By S. WHITEHORN, M. D., of Manhattan, K. T.—I am induced, by reading an article in the January number of the *American Journal* concerning the internal use of chloroform in intermittents, to record my brief experience in the same direction.

I have administered chloroform on several occasions to patients shaking violently with an ague chill. In every instance it has stopped the rigors after several inhalations. The feeling of oppression and all pains are simultaneously relieved. Should symptoms recur, I repeat the dose. I hope some of your subscribers, with a more extensive field than mine, will repeat the experiment, and report.

Extraordinary Fecundity. By WM. WOOD, M. D., of East Windsor Hill, Conn.—In the March number of the *Medical and Surgical Reporter* for 1856, I related the case of Mrs. R., who in five consecutive accouchments gave birth to five living children, weighing 62 lbs. 8 oz.—the largest 13 lbs. 10 oz., the smallest 11 lbs. 12 oz. Since then, a case has occurred in my practice which is perhaps still more remarkable. I was called to attend upon Mrs. S., Oct. 22, 1857, when she was delivered of three children, one male and two females. I was again called Oct. 13, 1858, when she was delivered of two male children, making five children in two confinements, in 11 months and 22 days. All would probably have been born alive had it not been for the officiousness of the nurse at the first labour, who said "she found something hanging and thought it ought to come away," and had actually pulled away 15 inches of the funis before my arrival.

All were born alive except this one. The twins weighed 13 lbs. 4 oz. (6 lbs. 13 oz. and 6 lbs. 7 oz.). The triplets, I regret to say, were not weighed. They were nearly as large as the twins; but calling them only 5 lbs. 8 oz. each, which I am confident is below their true weight, it gives about 30 lbs. of children in less than one year.

DOMESTIC SUMMARY.

Barton's Operation for Straightening the Knee-Joint by Excision of a wedge-shaped bit of Bone.—Dr. J. MASON WARREN recently read before the Boston Society for Medical Improvement a very interesting case of this.

The patient, a man 25 years of age, applied to Dr. W., in September, 1850, "on account of a great deformity of his limb, owing to an anchylosis of the knee-joint, the leg being bent at nearly a right angle with the thigh. He stated that his prospects had been destroyed and his life rendered wretched by his infirmity; and wished, if anything could be done for him short of extreme danger to his life, that it should be attempted. The history of the case, as given by him, was this. In November, 1841, he fell a distance of three feet, striking the knee. Three days after the fall, the knee began to swell and become painful. This went on for for four weeks, when it was punctured, and a pint of watery fluid escaped. It continued to discharge for fifteen months, during which time many small pieces of bone came away. The opening finally healed—leaving the joint and limb in its present distorted position. His hereditary tendencies were

scrofulous. In the erect position, resting upon the sound limb, the lame foot is seven and a half inches from the ground, but he can limp about with a high-heeled boot.

"I informed the patient that the only operation which suggested itself to me was Barton's operation, which had apparently been already described to him, and at once he requested to have it performed. I advised him to enter the hospital for the convenience of apparatus, which he did. Some of his friends attempted to deter him from running any risk, but he said he was determined either to undergo the operation, suggested by me, or to have the limb removed, as he could no longer bear the pain and mortification of his condition.

"On the second of October, the operation agreed upon was thus performed. A V-shaped incision was made through the skin just above the knee-joint, the base of the triangle, two inches wide, presenting outward, with the apex at the inner side of the limb. The flap was dissected up and the bone exposed, the other textures having become atrophied from disease. A wedge-shaped piece was sawn out of the femur, the incisions not being carried quite through, so as to avoid the artery. The remaining portion of bone was then broken; the flap was secured in its place, and the knee placed on a double inclined plane, and firmly fixed to it. There was no hemorrhage.

"On the following day, the patient said he had passed a restless night, but was free from pain. The limb was dressed on October 7th, and placed on a splint with a hinge and screw, so that it could be extended without any shock to the joint. By the 20th, the limb had been gradually brought to a straight position, and on the 29th the bones had united, and the wound was healed. Some time after this, he had a febrile attack, in the course of which the union became somewhat less firm, and threatened to dissolve; the system showing its scrofulous tendency. He gradually recovered, however, and left the hospital.

"About a year after his discharge, this gentleman presented himself to me, well. The limb was but very little shorter than the other, and with a pair of large trowsers the difference in the shape of the two limbs could scarcely be distinguished. He walked well with a cane, and the improvement between his present upright appearance in walking and his former painful method of locomotion would have almost prevented him from being recognized as the same individual.

"In a recent conversation with Dr. Barton—whose retirement from the profession in which he acquired so much honour is deeply to be regretted—he informed me that when he first began these operations, great danger was apprehended from the supposed interference with joints, or their vicinity. But he at once demonstrated what afterward seemed sufficiently evident, that the delicate structure of the joint had, in these cases, already been destroyed, and that the bones might as readily be interfered with at this point as in their continuity. In some cases greater symmetry may be gained by making the excision directly from the joint rather than above it, as there is then presented a much larger surface of bone. There are also other advantages. I have seen a patient thus operated upon, by Professor Mütter, with the most complete and gratifying success. Dr. Buck, of New York, has also done the operation successfully.—*Boston Med. and Surg. Journ.*, Dec. 23, 1858.

Diabetes.—Dr. Alonzo Clark called the attention of the New York Medical and Surgical Society to the history of two cases of diabetes, "in which he had resorted to a somewhat novel method of treatment with apparent benefit. The first case was that of a physician, aged 62, residing in the central part of the State of New York. He had naturally a robust constitution, and when in health had an average weight of 220 lbs. He stated that for the past forty years he had been actively engaged in the practice of his profession, and that he had enjoyed uninterrupted health until last spring, when his suspicions were excited by the occurrence of frequent micturition, accompanied with an increase in the amount of urine passed. He examined some of his urine, and detected the presence of sugar, fermentation taking place readily when the fluid was allowed to stand in a warm room. Its specific gravity was 103. Gradually he grew worse, muscular power being considerably diminished, and during the months of June

and July the urine still continued saccharine, and increased in quantity to a gallon per diem. At this time his strength was overtaxed in attending the practice of another physician. He continued at work, however, until about three weeks ago, when his failing health induced him to abandon his practice, and come to New York for advice. He arrived here three weeks since, and consulted Dr. Clark. The quantity of urine passed at this time was about the same, as also its specific gravity, and chemical examination revealed the presence of a considerable amount of sugar. The fluid responded to the fermentation test in twelve hours, tortulæ were formed in six hours, and the application of Trommer's test yielded a pretty abundant deposit of the red oxide of copper. Amongst the prominent symptoms were dryness of the mouth and skin, thirst, and constipation of the bowels, the feces being unnaturally hard. In the management of his case, Dr. Clark was led, from the experience of a previous one, to advise the use of bicarbonate of soda in doses of 11 grains, repeated as often as possible, provided the urine was not rendered alkaline, or the stomach nauseated. He also ordered counter-irritation to be established at the back of the neck, the idea of doing this having been suggested by the experiments of Bernard, who was able to cause a diabetic state of the urine by irritating the medulla oblongata. A mixed diet was allowed, vegetables in moderation, and hard biscuit being included, and the patient was cautioned respecting the use of water, which was to be taken only at meal-times, and at no time freely. With these directions, he went into the country on the 31st of August, and remained until Wednesday of that week, when he again visited Dr. Clark. During the interval of absence a vast improvement had taken place. He could now sleep eight hours, and on rising, pass less than a pint of urine, the quantity passed daily not exceeding three pints. He complained no longer of thirst, his lassitude was gone, his bowels were natural, and his weight had increased 7 lbs.; his urine, when examined, was found to have a specific gravity of 102.20, and when subjected to Trommer's test, gave the black instead of the red oxide of copper. The absence of sugar was further evidenced by the fact that the fluid was allowed to stand in a warm place over forty-eight hours without fermentation. Tortulæ were likewise absent, and in their place was a moderate number of crystals and oxalate of lime. The patient was sent home to continue the same plan of treatment.

"The *second case* was not as striking as the first, but yet was one of diabetes, treated in a similar way and with similar results. The patient was a gentleman who had once been under the care of Dr. Van Buren, and was seen by Dr. Clark two years ago. He then stated that he had suffered from the disease nine years previously, and that under the use of bicarbonate of soda, he had recovered and remained well for more than six years. At the time he applied to Dr. Clark, he was passing about a gallon of urine daily, which, on examination, was found to contain sugar; he also suffered the usual symptoms of the disease. He was put upon bicarb. soda, and a stimulating liniment, which, when rubbed upon the back of the neck, produced a sore that lasted for several weeks. During this period, he improved rapidly. Dr. Clark remarked that the results in these two cases were so satisfactory, that he thought himself warranted in recommending the same means of treatment for further trial.

"At a subsequent meeting of the society, Dr. Clark made a further report concerning the treatment of diabetes by blisters to the neck and administration of bicarbonate of soda. Since the time of the last notes, he had had three cases, in which to test it. The first passed a gallon of urine a day, and used soda for three weeks without benefit. The stomach was disordered by it, and the patient unable to continue the treatment.

"The second passed seven quarts a day of specific gravity 100.43—took soda for two and a half weeks, after which the amount went up to eight quarts, of specific gravity 100.4. This case left the hospital before treatment could be conducted to a close, or the remedy fairly tested.

"The third case, which passed ten pints per diem under blisters and soda, did not improve at first, but the dose of soda, being carried up to ʒiiss a day, the urine soon diminished in amount to six pints, of specific gravity of 100.28. That day only two quarts had been passed, and he seemed improving."—*New York Med. Journ.*, Jan., 1859.

Deformity after Fracture successfully treated.—Dr. DANIEL BRAINARD states (*Chicago Med. Journ.*, Jan., 1859) that in 1853 he proposed a new method of treatment for irregularity of bones resulting from badly treated fractures. This method consisted in weakening the bone by subcutaneous perforation, and causing it to soften by the inflammation thus excited, and then straightening it by pressure. This mode of treatment was founded on experiments on animals, and it is only recently that he has been able to try it in the human subject.

This case was that of a stout boy, three years of age, who, when three months old, had fractured his left leg, to which injury little attention had been paid, and when seen by Dr. Brainard, the leg was three inches shorter than the other, and presented an angularity forwards a little below the middle.

"The child having been placed under the influence of chloroform, a perforator, one-fourth of an inch in breadth, was passed in two different directions through the tibia at the point of fracture, but a single puncture being made through the skin. After the perforator was withdrawn, a piece of adhesive plaster was placed upon the puncture through the skin, and a light bandage placed around the member. The leg lying at the time upon a firm bed, I attempted to rupture the callus with my hands, by throwing nearly the whole weight of my body upon it. It did not, however, yield in the slightest degree, and not thinking it safe to use more force I desisted, and ordered the bandages to be kept wet with cold water.

"The inflammation which followed this operation, and the efforts to straighten the member, was considerable, and an erysipelatous redness extended from the ankle to the knee, which lasted more than a week. There was no suppuration, and by rest and the use of evaporating lotions, this was dissipated; and at the end of ten days, viz: on the 25th May, 1858, another attempt to straighten the leg was made.

"Although hoping for a favourable change, I was somewhat surprised to find that a very moderate degree of force, applied by the hands, was sufficient to cause the callus to give. A carved wooden splint, well padded, with a foot piece, was now placed behind the leg, and secured to it by a roller drawn across the angular projection as tightly as could be borne. This giving rise to no pain, the bandage was reapplied, every three days at first, afterwards once a week, for four weeks, at the end of which time the leg was quite straight, except a slight overlapping of the fragments. During this part of the treatment, the boy walked about with the splint on his leg and suffered no pain. The parents were directed to press upon the projection daily with the hands."

Three months after the operation the splints were discontinued, the boy could walk, and Dr. Brainard considered the cure to be complete.

Ovariotomy.—Dr. J W. HAMILTON, Professor of Surgery in Starling Medical College, relates (*Ohio Med. and Surg. Journ.*, Jan., 1859) two cases in which he performed this operation. In one the tumour was removed, and the patient recovered. In the second, after opening the abdomen, the adhesions between the abdominal walls and the tumour were found to be so firm that it was impossible to separate them. A trocar was introduced, but no fluid was discharged. The wound was closed, and the patient expired forty-two hours after the operation. Dr. Hamilton states the following facts in regard to the results of ovariotomy in Ohio:—

"In 1854, Dr. P. J. Buckner, now deceased, made a report to the State Society, that was supposed to contain all the cases operated on up to that time. It included eleven cases, of which six were successful and five fatal. Since that time, without having made this a special subject of attention, we have learned, through private channels mainly, of the following cases:—

"Professor Howard operated twice, found inseparable adhesions in one case, and abandoned the operation as impracticable, his patient dying within a few days. The other was cured and is still living. One esteemed friend operated twice, one patient dying, one recovering. Another undertook it twice, and was obliged to abandon it as often, one of the patients dying, one surviving. Within a few months, an eminent surgeon performed the operation, his patient dying within a few hours. Another made a moderate incision through the abdominal

parietes, his patient vomited, the tumour was thus forced into the external world, when ligating a small pedicle, the operation was completed. The patient recovered. We have been informed of three cases by another gentleman; two fatal, one successful.

"Of the operations performed since 1854, that we have learned of, accordingly, there are thirteen, five successful, and eight fatal. So that up to this time we have in Ohio twenty-four cases, eleven successful, and thirteen unsuccessful. This is probably about an average result."

—

Ovariotomy.—Dr. CHARLES A. POPE relates (*St. Louis Med. and Surg. Journ.*, Jan., 1859) four cases of diseased ovaria, in which he performed ovariotomy; two of which were successful, and two fatal. In one of the former, and one of the latter, the ecraseur was used to divide the pedicle.

—

Extirpation of the Eye.—Dr. C. R. AGNEW, Surgeon to the New York Eye Infirmary, in an interesting paper on this subject, extols the method of extirpation recommended by Mr. Critchett, which consists in incising the conjunctiva, and then dividing in succession the muscles near their insertions, as in the operation for strabismus; a method which, he thinks, is not generally understood. We can hardly suppose that any well read ophthalmic surgeon is unacquainted with this method, which certainly, in many cases, possesses great advantages over the old plan. The merit of suggesting it, however, belongs, he believes, not to Mr. Critchett, but to the late M. BONNET, of Lyons. (See LAWRENCE'S *Treatise on the Diseases of the Eye.* Philad. edition, 1854, p. 814.)

—

Apocynum Cannabinum as an Antiperiodic.—Dr. PETERFIELD TRENT, of Richmond, Va., having been disappointed in the treatment of intermittents with quinia, was induced, by the recommendation of Dr. R. S. Cauthorn, to try the apocynum cannabinum, and he reports (*Southern Med. and Surg. Journ.*, Jan. 1859) six cases successfully treated by this remedy. He gave it in pills, in the dose of five grains every two hours.

—

Chinoidine.—Dr. R. WYSONG, of Charlotte, N. C., uses chinoidine almost entirely instead of quinine, and has found the former, in a slightly increased dose, to be equally as efficient as the latter, and in some cases has proved to be even a more permanent antiperiodic. The quinoidine he has found, as have others, not to affect the head or disturb the stomach, as quinine sometimes does. He has administered the former in doses of a scruple every two hours, for ten hours, without its occasioning vomiting.—*Medical Journal of North Carolina*, Dec., 1858.

—

Iodine and Glycerine in Scrofulous Ozæna.—Ozæna is usually a very obstinate affection, and sometimes persists in spite of the usual treatment. Dr. H. F. CAMPBELL states (*Southern Med. and Surg. Journ.*, March, 1859) that he has recently cured, in less than a month, an obstinate case by the application, three or four times a day, of two grains of iodine dissolved in one ounce of glycerine, to the affected Schneiderian membrane; and by the internal administration, at the same time, of a tablespoonful, three times a day, in sweetened water, of a mixture consisting of iodide of potassium ʒij, Huxham's tincture of bark ℥viij.

—

Urea and Uric Acid in Urinary Secretions in Yellow Fever.—In our number for April, 1858 (p. 570), we noticed the statement by Dr. F. P. Porcher, that he had not been able, during the yellow fever of 1856, in Charleston, to detect uric acid or urea in the urine of those affected with the epidemic. In a paper in the *Charleston Med. Journ.*, for March, 1859, he states that during the prevalence of the disease last summer, having examined the specimens with more extended experience, and with special direction to this point, he found nitrate of urea, by evaporating the urine in a watch-glass over a spirit lamp, in some of the cases of fever. Crystals of uric acid he has not yet found, and he regards this as indicative of its diminished amount.

INDEX.

A.

Abdomen, contusions of, 515
Abortion, criminal, 314
Adhesive plaster in maintaining counter-extension in fractures, 410
Agnew, extirpation of eye, 578
———, vesico-vaginal fistula, 367
Alcantara, perchloride of iron in in-growing toe-nail, 561
Alford, chlorine in diphtheria, 545
American Medical Association, review of Transactions of, 425
Anal fistula, ecraseur in, 557
Anthelmintics, value of different, 247
Apocynum cannabinum as an antiperiodic, 578
Arsenical paper hangings, 570
Articular extremity of bones, chronic inflammation of, 255
Atlee, strangulated hernia, 275
Aveling, antiquity of metal sutures, 560

B.

Barnes on Placenta Prævia, review of, 176
Barthez, instillation of solution of chlorate of soda in trachea, in cough, 544
Barton's operation for straightening knee-joint, 574
Barudel, perchloride of iron in urethritis, 561
Barwell, hysteric condition of joints, 248
Beale, microscope in its applications to practical medicine, notice of, 528
Beers, obituary notice of, 283
Bell, descent of testicle simulating hernia, 563
Bennet, nutrition in health and disease, notice of, 530
Bernard, Lectures on the Physiology and Pathology of the Nervous System, review of, 156
Bibliographical notices, 187, 493
——— Beale on Microscope in its Applications to Practical Medicine, 528
——— Bennet, Nutrition in Health and Disease, 530
——— Bigelow's Brief Expositions of Rational Medicine, 502
——— Bloomingdale Asylum for the Insane, Report for 1857, 498
——— Braun, Uræmic Convulsions, 215
——— Brown-Sequard, Journal of Physiology, 209
Bibliographical notices—*continued*.
——— Catalogue of Dr. Mott's Museum, 194
——— Condie on Diseases of Children, 187
——— Dobbell's Illustrations of Diseases of Chest, 533
——— Elliott's new Midwifery Forceps, 196
——— Erichsen, Science and Art of Surgery, 210
——— Garner, Eutherapeia, 203
——— Godard, Monorchidie and Cryptorchidie, 205
——— Guy's Hospital Reports, 1858, 510
——— Hodges' Practical Dissector, 506
——— Humphry's Treatise on the Human Skeleton, 525
——— Hunter and Ricord on Venereal, 213
——— Lallemand, Spermatorrhœa, 212
——— Malgaigne on Fractures, 213
——— Morland on Urinary Organs, 190
——— Morris on Scarlet Fever, 198
——— Ogston's Syllabus of Lectures on Medical Logic, 532
——— Radcliffe, Hygiene of Turkish Army, 534
——— Reports of American Asylums for the Insane, 492
——— Smith, Practice of Midwifery, 214
——— Teale, Amputation, 208
——— Thompson on Stricture of Urethra, 201
——— Upham, Typhus Fever in Great Britain, 192
——— Watters on Inflammation, 199
——— Watson's Lectures on Physic, 211
——— Wilson's Anatomy, 222
Bigelow, brief expositions of rational medicine, notice of, 502
Biliary ducts, lumbrici in, 254
Birkett, surgery of new growths, 519
Bleeding in diseases, 240
Blood-corpuscles, changes produced by cod-liver oil, in amount of, 243
Blood-cells, changes of in spleen, 281
Blood-stains, 84
Bloomingdale Asylum for Insane, notice of report for 1857, 498
Blowing sound in the pulmonary artery associated with affections of the lung, 119
Böcker, therapeutic properties of sarsaparilla, 227
Boinet, new mode of administering iodine, 226
Bond, pathology of rheumatism, 250
Bonfils, lumbrici in biliary ducts, 254
Bonorden, ox-gall in hypertrophies, 246
Brainard, deformity after fracture, 577

Brainard, ununited fractures, 279
Braun, uræmic convulsions, notice of, 215
Brenchley, hydrochlorate of ammonia in neuralgia, 541
Bronzed-skin and healthy supra-renal capsules, 251, 546
———— cachexia, with congenital absence of supra-renal capsules, 251
Brown-Séquard, Journal of Physiology, notice of, 209
Bryant, chronic inflammation of articular extremity of bones, 255
———, opening the urethra in the perineum, 514
Buchanan, vesico-vaginal fistula, 261
Buel, medical topography, &c., of Panama, 131
Busch, physiology of digestion and nutrition, 535

C.

Campbell, iodine and glycerine in ozæna, 578
Cancer, anatomical diagnosis of, 67
——— Lawrence on Surgical Diagnosis of, review of, 172
Carbonic acid, inhalation of in granular pharyngitis, 543
————, quantity evolved from lungs, 223
Carbuncular inflammation of lip, 308
Carcinoma, contributions to literature of, 297
Carduus mariæ and C. benedictus, action of, 537
Cataract, improved method of extracting, 515
Chapin, apparatus for fractures, 355
Chinoidine as an antiperiodic, 578
Choroid coat of eye, structure of, 226
Chlorate of soda, instillation of solution of, in trachea, in croup, 544
Chlorine in diphtheria, 545
Chloroform, inhalation of, in intermittents, 574
Chronic alcoholic intoxication, treatment of, 546
Cigarettes, mercurial, 539
Clark, treatment of diabetes, 575
Clarus, action of ranunculaceæ, 572
Clavicle, rare form of fracture of, 258
Coccyx, displacement of, 259
Cock, pharyngotomy for extraction of foreign body, 518
Cocquerel, larvæ in frontal sinuses, 254
Cod-liver oil, changes produced in amount of blood-corpuscles by, 242
Coloboma iridis, 262
Colourless blood-corpuscles, 348
Condie on Diseases of Children, notice of, 187
Continued fevers, nomenclature and classification of, 229
Copper in organic tissues, 515
Cornea, staphyloma of, 566
Corse, imperforate rectum, 375
——— intermittent lochia, 365
Corvisart on a little known Function of the Pancreas, review of, 183
Cotting, ether in midwifery, 281
Cranium, fracture of base of, 354
Craniotomy, abolition of from midwifery practice, 567
Critchett, iridesis, 564
Croton-oil as an epispastic, 540
Croup, instillation of solution of chlorate of soda in trachea, 544
Cyst in cerebellum, intense neuralgic pain in head, 549

D.

DaCosta, blowing sound in the pulmonary artery associated with affections of the lung, 119
———— effect of respiration on the position of the heart, 370
Dalton's Human Physiology, review of, 446
Darrach, gangrene of the lungs, 350
Davey, disorganization of supra-renal capsules without bronzed-skin, 548
Delaharpe, Jaser's itch ointment, 227
Delirium tremens, pathology and treatment of, 238
Dental pathology, 520
Deval, hemeralopia treated by azotized vapour, 265
Diabetes successfully treated, 575
Digestion and nutrition, physiology of, 535
———, Harley's experiments on, 223
Diphtheria, chlorine in, 545
————, symptoms and treatment of, 234, 236
Dislocation of cervical vertebræ, 280
———— of femur, 258
———— of forearm, 259
Dixon, irideremia, 263
Diuretics, action of certain vegetable, 275
Dobbell's illustrations of diseases of the chest, notice of, 533
Draper, changes of blood-cells in spleen, 281
Dropsy treated with lemons, 247
Dupré, copper in organic tissues, 515

E.

Ecraseur in anal fistula, 557
Edwards, physiological properties of xyloids, 538
Elliott's new midwifery forceps, notice of, 196
Elsasser, duration of pregnancy, 266
Encephaloid cancer affecting a retained testicle, 563
Erichsen, science and art of surgery, notice of, 210
Ether, extent to which it may be used in midwifery, 281
Extirpation of eye, 578
Eyeball, form of, 224
Eye, extirpation of, 578

F.

Farrar, rupture of large ovarian cyst, cure, 262

Fecundity, extraordinary, 574
Femur, dislocation of reduced by Reid's plan, 258
Fleming, blood-stains, 84
Flint, clinical history of heart-sounds, 278
Forceps, indications for application of, 569
Foster, gastrotomy, 510
Fracture, deformity after, 577
———, possibility of detecting a few weeks after its occurrence, 560
Fractures, apparatus for, 355
——— ununited, treated by subcutaneous perforation of bone, 279
France, ophthalmostasis, 515
Frontal sinus, larvæ of dipteræ in, 254

G.

Gangrene of the lungs, 350
Garner, Eutherapeia, notice of, 203
Gastrotomy in epithelial cancer of œsophagus, 510
Gibert, glycerole de goudron and oil of cade in impetiginous and eczematous eruptions, 228
Gilbert, adhesive plaster in maintaining counter-extension in fractures, 410
Glycerole de Goudron in eczematous and impetiginous eruptions, 228
Godard, monorchidie and cryptorchidie, notice of, 205
Gonorrhœa, injections in, 562
Granular pharyngitis, inhalation of carbonic acid in, 543
Greenhow, sanitary state of the people of England, review of, 143
Gull, paraplegia, 516
Guy's Hospital Reports, notice of vol. iv., 510

H.

Habershon, epithelial cancer of œsophagus, gastrotomy, 510
Hæmostatic properties of chloride of iron, 540
Hamilton, inutility of depletion in syphilitic iritis, 264
———, ovariotomy, 577
Hammond, action of certain vegetable diuretics, 275
——— colourless blood-corpuscles, 348
Harley, bronzed-skin with healthy suprarenal capsules, 251
——— experiments on digestion, 223
Hartford Retreat, notice of report for 1857–58, 497
Hawkins, possibility of detecting a fracture a few weeks after its occurrence, 560
Hays, large dose of opium, 367
Heart, effect of respiration on position of, 370
Heart-sounds, clinical history of, 278
Heat and electricity, influence of on spinal cord, 536
Hemeralopia treated by azotized vapour, 265
Hemorrhage from pharynx, 377
Hepatic lobules, minute structure of, 13
Hernia, descent of testicle simulating, 563
———, strangulated, case of, 275
Hodges' Practical Dissections, notice of, 506
Hodson, chlorine in diphtheria, 545
Horner, Isthmus of Panama, 359
Humphry on human skeleton, notice of, 525
Hunt, tænia cured by pumpkin-seeds, 374
Hunter and Ricord on Venereal, notice of, 213
Hunter, narcotic injections in neuralgia, 244
Hydrocele, new method of curing, 558
Hydrochlorate of ammonia in neuralgia, 541
Hypertrophies, ox-gall in, 246
Hysteric condition of joints, 248

I.

Indiana State Hospital for Insane, notice of report for 1857, 501
Inhalation of carbonic acid in granular pharyngitis, 543
Inversion of uterus successfully reduced, 266
Iodine and glycerine in ozæna, 578
Iodine, new modes of administering, 226
Irideremia, 263
Iridesis, 564
Iris, artificial pupil by tying the, 564
Itch ointment, Jaser's, 227
Itzigsohn, sarcina ventriculi, 537

J.

Jackson, hemorrhage from frænum linguæ, 141
Jaser's itch ointment, 227
Jewell, meteorology and epidemics in 1858, 379
Johnson, encephaloid cancer affecting a retained testicle, 563
Joints, hysteric condition of, 248
Jones, disarticulation of scapula from shoulder-joint, 551

K.

King, supposed poisoning by strychnia, 573
King's County (N. Y.) Asylum, notice of report for 1857–'58, 498
Kingsford, symptoms and treatment of diphtheria, 234
Kinlock, case of pseudarthrosis, 136
Knee-joint, Barton's operation for straightening, 574
Kunde, influence of heat and electricity on spinal cord, 536

L.

Lallemand, spermatorrhœa, notice of, 212
Lankester, ozonometer, 274
Lawrence, surgical diagnosis of cancer, review of, 172
Laycock, pathology and treatment of delirium tremens, 238
Lemons, dropsy treated with, 247

Lente, carbuncular inflammation of lip, 308
Leriche, new modes of administering iodine, 226
Leroy de Mericourt, peculiar coloration of skin, 252
Levick on sun stroke, 40
Lithotomy operations, statistical analysis of 186, 552
Liver, sugar forming function of, influence of diet on, 521
Lobach, action of carduus mariæ, C. benedictus, and onopordum acanthium, 537
Lochia, intermittent, 365
Lockwood, fracture of base of cranium, 354
Lumbrici in biliary ducts, 254
Lung, blowing sound in pulmonary artery associated with affections of, 119

M.

Marcet, treatment of chronic alcoholic intoxication, 546
Malgaigne on fractures, 213
Markham, bleeding in diseases, 240
Maryland Hospital for the Insane, notice of report for 1857, 499
Massachusetts State Hospital, Taunton, notice of report for 1856 and 1857, 494
Mayer, morbid conditions which give rise to sterility in women, 267
McClintock, scarlatina after parturition, 570
Mercurial cigarettes, method of making, 539
Mertens, ulceration and perforation of vermiform appendix, 550
Metal sutures, antiquity of, 560
Microscopic dissector, 30
———— needle holder, 29
Miller, ovariotomy, 318
Mitchell, effect of alcohol, &c., on exposed heart, 343
————, improved spirometer, 378
Morland, diseases of urinary organs, notice of, 190
Morris on scarlet fever, notice of, 198
Mott, catalogue of museum of, notice of, 194
Murchison, nomenclature and classification of continued fevers, 229
————, pig fed with typhoid dejections, 252

N.

Narcotic injections in neuralgia, 244
Neuralgia, hydrochlorate of ammonia in, 541
————, narcotic injections in, 244
Neuralgic pain in head, cysts in cerebellum, 549
Nevins, administration of medicine in vapour, 541
————, mercurial cigarettes, 539
New Hampshire Asylum for the Insane, notice of report for 1857–'58, 493
Nicotina, poisoning by, 525
Nunneley, form of eyeball, 224
————, structure of choroid coat of eye, 226

O.

Œsophagus, ligature of, in animals, in toxicological experiments, 272
Odling, copper in organic tissues, 515
Ogston, syllabus of lectures on medical logic, notice of, 532
Onopordum acanthium, action of, 537
Opium, large doses of, without fatal effects, 367
Ovarian cyst, rupture of, cure, 262
Ovariotomy, 318, 577, 578
Ox-gall in hypertrophies, 246
Oxide of zinc in chronic alcoholic intoxication, 546
Ozæna, iodine and glycerine in, 578
Ozonometer, 274

P.

Packard, affections of spinal column, 62
————, hemorrhage from pharynx, 377
Pagliari's hæmostatic, formula for, 540
Panama, medical topography, &c., of, 131, 359
Paraplegia, cases of, 516
Parkes, great pigment deposit on skin without disease of supra-renal capsules, 546
Pavy, sugar-forming function of liver, 521
Peacock, value of different anthelmintics, 247
Perchloride of iron, hæmostatic properties of, 540
———————— in in-growing toe nail, 561
———————— in urethritis, 561
Pharyngotomy for extraction of foreign body, 518
Pharynx, hemorrhage from, 377
Philadelphia, meteorology and epidemics of in 1858, 379
Phillips, impermeable stricture, 260
Pickford on Hygiene, review of, 143
Pneumonia, non-periodical fluctuation in, 237
Poisoning by nicotina, 525
Poland, contusions of abdomen, 515
Pope, ovariotomy, 578
Porcher, urea and uric acid in urinary secretions in yellow fever, 578
Porter, suffocation from foreign body in rima glottidis, 563
Port wine enemata as a substitute for transfusion of blood in post-partum hemorrhage, 266
Pregnancy, duration of, 266
Pseudarthrosis of bones of forearm, 136
Pumpkin-seeds, tænia cured by, 374

Q.

Quinlan, ecraseur in anal fistula, 557

R.

Radcliffe, hygiene of Turkish army, notice of, 534

Ranunculaceæ, pharmacology and toxicology of, 572
Rectum, imperforate, 375
Re-fracture of bone, 558
Reid on Ventilation, review of, 143
Respiration, effect of on position of the heart, 370
Review of Pickford on Hygiene, 143
——— Barnes on Placenta Prævia, 176
——— Bernard, Physiology and Pathology of the Nervous System, 156
——— Corvisart, a little known Function of the Pancreas, 183
——— Dalton's Human Physiology, 446
——— Greenhow, Sanitary State of People of England, 143
——— Lawrence, Diagnosis of Surgical Cancer, 172
——— Reid, Ventilation, 143
——— Transactions of the American Medical Association, vol. xi., 425
——— Thudichum on the Pathology of the Urine, 487
——— Wynne's Vital Statistics of the United States, 458
Rheumatism, pathology of, 250
Richardson, staphyloma of cornea, 566
——————— voltaic narcotism, 540
Rima glottidis, foreign body in, 563
Robert, rare form of fracture of clavicle, 258
Roeser, displacement of coccyx, 259
Ryer, dislocation of cervical vertebræ, 280

S.

Salter, dental pathology, 520
Sarcina ventriculi, 537
Sarsaparilla, therapeutic properties of, 227
Scapula, disarticulation of from shoulder-joint, 551
Scarlatina after parturition, 570
Schmidt, minute structure of hepatic lobules, 13
——————— apparatus for making microscopic sections of tissue, 35
——————— microscopic dissector, 30
——————— needle-holder, 29
Sedillot, internal urethrotomy, 260
Semple on diphtheria, 236
Sigmund, injections in gonorrhœa, 562
Simpson, new method of curing hydrocele, 558
Skey, re-fracture of bone, 558
Skin, great pigment deposit in without disease of supra-renal capsules, 546
——— peculiar coloration of, 252
Smith, midwifery, notice of, 214
——— on quantity of carbonic acid evolved from lungs, &c., 223
——— abolition of craniotomy from midwifery practice, 567
Spender, bronzed-skin cachexia with congenital absence of supra-renal capsules, 251
Sperometer, improved, 378
Spiegelberg, indications for the application of the forceps, 569
Spinal column, affections of, 62
Spinal cord, influence of heat and electricity on, 536
Spleen, changes of blood-cells in, 281
Square, dislocation of femur reduced by Reid's plan, 258
Staphyloma of cornea, 566
Sterility, morbid conditions which give rise to in women, 267
Storer, illustrations of criminal abortion, 314
——— use and abuse of uterine tents, 57
Streatfeild, coloboma iridis, 262
Stricture, impermeable, 260
Strychnia, supposed poisoning by, 573
Suffocation from foreign body in rima glottidis, 563
Sugar-forming function of liver, 521
Sunstroke, 40
Supra-renal capsules, congenital absence of with bronzed skin, 251
——————— disorganized without bronzed skin, 548
———————, healthy with bronzed skin, 251
Syphilitic iritis, inutility of depletion in, 264

T.

Tænia cured by pumpkin seeds, 374
Taylor, arsenical paper hangings, 570
——— poisoning by nicotina, 525
Teale, amputation, notice of, 208
Testicle, descent of, simulating hernia, 563
——— encephaloid cancer of, 563
Thompson on stricture of the urethra, 241
——— changes produced in amount of blood-corpuscles by cod-liver oil, 243
Thudichum, pathology of the urine, review of, 458
Trent, apocynum cannabinum as an antiperiodic, 578
Trinkowsky, dropsy treated with lemons, 247
Turnbull, intense neuralgic pain in the head, sudden death, 549
Typhoid fever, not propagated by typhoid dejections, 252

U.

United States Hospital for Insane, notice of report for 1857–58, 500
Upham, typhus fever in Great Britain, notice of, 192
Urea and uric acid in urinary secretions in yellow fever, 578
Urethra, opening of in perineum, 514
Urethrotomy, internal, 260
Uterine tents, use and abuse of, 57
Uterus, inversion of, successfully reduced, 266, 282

V.

Van Bastelaer, croton oil as an epispastic, 540
Vapour, administration of medicines in, 541
Verity, inversion of uterus successfully reduced, 266

Lente, carbuncular inflammation of lip, 308
Leriche, new modes of administering iodine, 226
Leroy de Mericourt, peculiar coloration of skin, 252
Levick on sun stroke, 40
Lithotomy operations, statistical analysis of 186, 552
Liver, sugar forming function of, influence of diet on, 521
Lobach, action of carduus mariæ, C. benedictus, and onopordum acanthium, 537
Lochia, intermittent, 365
Lockwood, fracture of base of cranium, 354
Lumbrici in biliary ducts, 254
Lung, blowing sound in pulmonary artery associated with affections of, 119

M.

Marcet, treatment of chronic alcoholic intoxication, 546
Malgaigne on fractures, 213
Markham, bleeding in diseases, 240
Maryland Hospital for the Insane, notice of report for 1857, 499
Massachusetts State Hospital, Taunton, notice of report for 1856 and 1857, 494
Mayer, morbid conditions which give rise to sterility in women, 267
McClintock, scarlatina after parturition, 570
Mercurial cigarettes, method of making, 539
Mertens, ulceration and perforation of vermiform appendix, 550
Metal sutures, antiquity of, 560
Microscopic dissector, 30
———— needle holder, 29
Miller, ovariotomy, 318
Mitchell, effect of alcohol, &c., on exposed heart, 343
————, improved spirometer, 378
Morland, diseases of urinary organs, notice of, 190
Morris on scarlet fever, notice of, 198
Mott, catalogue of museum of, notice of, 194
Murchison, nomenclature and classification of continued fevers, 229
————, pig fed with typhoid dejections, 252

N.

Narcotic injections in neuralgia, 244
Neuralgia, hydrochlorate of ammonia in, 541
————, narcotic injections in, 244
Neuralgic pain in head, cysts in cerebellum, 549
Nevins, administration of medicine in vapour, 541
————, mercurial cigarettes, 539
New Hampshire Asylum for the Insane, notice of report for 1857-'58, 493
Nicotina, poisoning by, 525
Nunneley, form of eyeball, 224
————, structure of choroid coat of eye, 226

O.

Œsophagus, ligature of, in animals, in toxicological experiments, 272
Odling, copper in organic tissues, 515
Ogston, syllabus of lectures on medical logic, notice of, 532
Onopordum acanthium, action of, 537
Opium, large doses of, without fatal effects, 367
Ovarian cyst, rupture of, cure, 262
Ovariotomy, 318, 577, 578
Ox-gall in hypertrophies, 246
Oxide of zinc in chronic alcoholic intoxication, 546
Ozæna, iodine and glycerine in, 578
Ozonometer, 274

P.

Packard, affections of spinal column, 62
————, hemorrhage from pharynx, 377
Pagliari's hæmostatic, formula for, 540
Panama, medical topography, &c., of, 131, 359
Paraplegia, cases of, 516
Parkes, great pigment deposit on skin without disease of supra-renal capsules, 546
Pavy, sugar-forming function of liver, 521
Peacock, value of different anthelmintics, 247
Perchloride of iron, hæmostatic properties of, 540
———————— in in-growing toe nail, 561
———————— in urethritis, 561
Pharyngotomy for extraction of foreign body, 518
Pharynx, hemorrhage from, 377
Philadelphia, meteorology and epidemics of in 1858, 379
Phillips, impermeable stricture, 260
Pickford on Hygiene, review of, 143
Pneumonia, non-periodical fluctuation in, 237
Poisoning by nicotina, 525
Poland, contusions of abdomen, 515
Pope, ovariotomy, 578
Porcher, urea and uric acid in urinary secretions in yellow fever, 578
Porter, suffocation from foreign body in rima glottidis, 563
Port wine enemata as a substitute for transfusion of blood in post-partum hemorrhage, 266
Pregnancy, duration of, 266
Pseudarthrosis of bones of forearm, 136
Pumpkin-seeds, tænia cured by, 374

Q.

Quinlan, ecraseur in anal fistula, 557

R.

Radcliffe, hygiene of Turkish army, notice of, 534

Ranunculaceæ, pharmacology and toxicology of, 572
Rectum, imperforate, 375
Re-fracture of bone, 558
Reid on Ventilation, review of, 143
Respiration, effect of on position of the heart, 370
Review of Pickford on Hygiene, 143
——— Barnes on Placenta Prævia, 176
——— Bernard, Physiology and Pathology of the Nervous System, 156
——— Corvisart, a little known Function of the Pancreas, 183
——— Dalton's Human Physiology, 446
——— Greenhow. Sanitary State of People of England, 143
——— Lawrence, Diagnosis of Surgical Cancer, 172
——— Reid, Ventilation, 143
——— Transactions of the American Medical Association, vol. xi., 425
——— Thudichum on the Pathology of the Urine, 487
——— Wynne's Vital Statistics of the United States, 458
Rheumatism, pathology of, 250
Richardson, staphyloma of cornea, 566
——— voltaic narcotism, 540
Rima glottidis, foreign body in, 563
Robert, rare form of fracture of clavicle, 258
Roeser, displacement of coccyx, 259
Ryer, dislocation of cervical vertebræ, 280

S.

Salter, dental pathology, 520
Sarcina ventriculi, 537
Sarsaparilla, therapeutic properties of, 227
Scapula, disarticulation of from shoulder-joint, 551
Scarlatina after parturition, 570
Schmidt, minute structure of hepatic lobules, 13
——— apparatus for making microscopic sections of tissue, 35
——— microscopic dissector, 30
——— needle-holder, 29
Sedillot, internal urethrotomy, 260
Semple on diphtheria, 236
Sigmund, injections in gonorrhœa, 562
Simpson, new method of curing hydrocele, 558
Skey, re-fracture of bone, 558
Skin, great pigment deposit in without disease of supra-renal capsules, 546
——— peculiar coloration of, 252
Smith, midwifery, notice of, 214
——— on quantity of carbonic acid evolved from lungs, &c., 223
——— abolition of craniotomy from midwifery practice, 567
Spender, bronzed-skin cachexia with congenital absence of supra-renal capsules, 251
Sperometer, improved, 378
Spiegelberg, indications for the application of the forceps, 569
Spinal column, affections of, 62
Spinal cord, influence of heat and electricity on, 536
Spleen, changes of blood-cells in, 281
Square, dislocation of femur reduced by Reid's plan, 258
Staphyloma of cornea, 566
Sterility, morbid conditions which give rise to in women, 267
Storer, illustrations of criminal abortion, 314
——— use and abuse of uterine tents, 57
Streatfeild, coloboma iridis, 262
Stricture, impermeable, 260
Strychnia, supposed poisoning by, 573
Suffocation from foreign body in rima glottidis, 563
Sugar-forming function of liver, 521
Sunstroke, 40
Supra-renal capsules, congenital absence of with bronzed skin, 251
——— disorganized without bronzed skin, 548
———, healthy with bronzed skin, 251
Syphilitic iritis, inutility of depletion in, 264

T.

Tænia cured by pumpkin seeds, 374
Taylor, arsenical paper hangings, 570
——— poisoning by nicotina, 525
Teale, amputation, notice of, 208
Testicle, descent of, simulating hernia, 563
——— encephaloid cancer of, 563
Thompson on stricture of the urethra, 241
——— changes produced in amount of blood-corpuscles by cod-liver oil, 243
Thudichum, pathology of the urine, review of, 458
Trent, apocynum cannabinum as an anti-periodic, 578
Trinkowsky, dropsy treated with lemons, 247
Turnbull, intense neuralgic pain in the head, sudden death, 549
Typhoid fever, not propagated by typhoid dejections, 252

U.

United States Hospital for Insane, notice of report for 1857–58, 500
Upham, typhus fever in Great Britain, notice of, 192
Urea and uric acid in urinary secretions in yellow fever, 578
Urethra, opening of in perineum, 514
Urethrotomy, internal, 260
Uterine tents, use and abuse of, 57
Uterus, inversion of, successfully reduced, 266, 282

V.

Van Bastelaer, croton oil as an epispastic, 540
Vapour, administration of medicines in, 541
Verity, inversion of uterus successfully reduced, 266

Vermiform appendix, ulceration and perforation of, 550
Vertebræ, dislocation of cervical, 280
Vesico-vaginal fistula, 261, 367
Voltaic narcotism, 540

W.

Warren, Barton's operation for straightening knee-joint, 574
Watson's Lectures, notice of, 211
Watters on Inflammation, notice of, 199
Western Pennsylvania Hospital for the Insane, notice of report for 1857, 498
Whitehorn, inhalation of chloroform in intermittents, 574
White, reduction of inverted uterus, 282
Wilks, pathological observations, 513
Willemin, inhalation of carbonic acid in granular pharyngitis, 543
Williams, enemata of port wine as a substitute for transfusion of blood in post-partum hemorrhage, 266
Wilson's Anatomy, notice of, 222
Wood, extraordinary fecundity, 574
Woodward, anatomical diagnosis of cancer, 67
——— contributions to literature of carcinoma, 297
Wynne, vital statistics of the United States, review of, 458
Wysong, chinoidine, 578

X.

Xyloids, physiological properties of, 538

Y.

Yellow fever, urea in urinary secretions in, 578

Z.

Ziemssen, non-periodical fluctuations of pneumonia, 237

GRADUATES OF JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA, MARCH, 1859.

At a Public Commencement, held on the 15th of March, 1859, the degree of DOCTOR OF MEDICINE was conferred on the following gentlemen by the Hon. EDWARD KING, LL. D., President of the Institution; after which, a Valedictory Address to the Graduates was delivered by Prof. BACHE.

NAME.	STATE OR COUNTRY.	SUBJECT OF THESIS.
Adams, Martin	Ohio.	Animal Heat.
Alexander, Eli M.	Mississippi.	Cholera Infantum.
Alexander, Samuel Lewis	Pennsylvania.	Drunkenness.
Almond, Andrew J. (M. D.)	Virginia.	Physiology of Digestion.
Anderson, Edwin P.	Tennessee.	Miasmata.
Anderson, Peter E.	Virginia.	Phthisis.
Bankhead, Robert A.	Mississippi.	Epidemic Colo-rectitis in Mississippi in 1857.
Barr, James M. (M. D.)	Virginia.	Asthma.
Baskin, Robert H.	Georgia.	Anatomy of the Eye.
Beadles, Percival	Virginia.	Pneumonia Typhoides.
Beman, Edward D.	Georgia.	Epilepsy.
Benson, Douglas B.	Virginia.	Concussion and Compression of the Brain.
Bibb, Alexander L.	Missouri.	Congestive Fever.
Bivins, Robert T.	Georgia.	Variola.
Blackwell, Thomas J.	North Carolina.	Puerperal Fever.
Blanton, William H.	Kentucky.	Gonorrhœa.
Bledsoe, Francis M.	Alabama.	The Tongue as a Symptom of Disease.
Blick, Joseph A.	Virginia.	Gonorrhœa.
Boggs, Charles D.	Virginia.	Epidemic Dysentery.
Boon, William C.	Missouri.	Heterologous Formations.
Bowers, Thomas C.	Canada West.	Inflammation.
Brewer, William T.	North Carolina.	Acute Inflammation.
Brinton, J. Bernard	Pennsylvania.	Aneurism.
Brown, Thomas H. B.	Virginia.	Diarrhœa.
Brown, W. C.	Arkansas.	Bilious Remittent Fever.
Brumby, G. McDuffie	Mississippi.	Inflammation.
Butler, Oliver H.	New York.	Phthisis Pulmonalis.
Campbell, William	Pennsylvania.	Treatment of Scarlet Fever.
Canfield, Augustus R.	Mississippi.	Fractures.
Carn, Lewis M.	Florida.	Pneumonia.
Caruthers, C. Kotzebue (M. D.)	Tennessee.	Pathology of Glycosuria.
Caswell, Edward T.	Rhode Island.	Urology.
Cauthorne, A. Hart	Virginia.	Circulation.
Cawood, J. C.	Tennessee.	Epidemic Typhoid Fever.
Chandler, Isaac L. (M. D.)	Georgia.	Dysentery.
Cheney, W. D.	Georgia.	Pneumonia.
Clements, William M.	Tennessee.	Dysentery.
Coard, William H.	Virginia.	Variola.
Comfort, Jonathan J. (M. D.)	Michigan.	Dislocation of the Hip-joint.
Cooper, Edward S.	Indiana.	Erysipelas.
Corbin, Philip S. P.	Virginia.	The Liver and Peyer's Glands.
Cotten, James F.	Georgia.	Pneumonia in Cobb County, Georgia.
Cox, George W.	Virginia.	Gonorrhœa.
Crawe, J. Mortimer	New York.	Dysentery.
Crawford, George G.	Georgia.	Dyspepsia.
Crawford, James J.	Virginia.	The Three Periods in Woman's Life.
Crews, O. L.	Alabama.	Alcohol.
Crigler, John L.	Mississippi.	Yellow Fever.
Cunningham, H. Clay (M. D.)	Kentucky.	Hysteria.
Davis, James F.	South Carolina.	The Cutis and its Functions.
Dean, James, Jr.	Georgia.	Bilious Remittent Fever.
Deloach, A. B.	Mississippi.	Aneurism.
Dickson, John H.	South Carolina	Inflammation.
Dorset, Thomas B., Jr.	Virginia.	Rheumatism.
Drennen, Horatio	South Carolina.	Puerperal Convulsions.
Dunglison, Thomas R.	Pennsylvania.	Rigor Mortis.
Dysart, Benjamin G.	Missouri.	Retroversion of the Uterus.
Dysart, William P.	Missouri.	Sunstroke.
Eads, Darwin D.	Kentucky.	Vital Phases.
Eckert, John N. (M. D.)	Pennsylvania.	Phthisis Pulmonalis.
Edmunds, Nicholas C.	Virginia.	Intermittent Fever.

NAME.	STATE OR COUNTRY.	SUBJECT OF THESIS.
Elder, William T.	Virginia.	Hæmaturia.
Fitzpatrick, William J.	Alabama.	Bilious Remittent Fever.
Flagg, Samuel D., Jr.	New York.	Abscesses of the Abdominal Viscera.
Flore, Frederick B.	Missouri.	Remittent Fever.
Flowers, John	Pennsylvania.	Organized Products of Disease.
Foley, Thomas W.	Louisiana.	Inflammation.
Foote, Frederick	Virginia.	Rheumatism.
Foote, George C.	Pennsylvania.	Healthy Human Urine.
Frame, Robert	Delaware.	Etiology of Puerperal Peritonitis.
Francis, G. M.	Texas.	Pneumonia.
Fulmore, Zachariah R.	South Carolina.	Icterus.
Fulton, James	Pennsylvania.	Puerperal Peritonitis.
Fussell, Benjamin L.	Pennsylvania.	Puerperal Peritonitis.
Gee, Edward C.	Virginia.	Dysentery.
Gilkey, John H.	North Carolina.	Dysentery.
Glass, W. L.	North Carolina.	Dyspepsia.
Glenn, James Mallory	Georgia.	Female Pelvis.
Glenn, James S.	Alabama.	Varicocele.
Glover, Charles P.	Tennessee.	Circulation of the Blood.
Goodwin, Thomas W.	Mississippi.	Remittent Fever.
Gordan, William H.	Pennsylvania.	Iron, chemically and therapeutically considered.
Grafton, Joseph D.	Arkansas.	Cirrhosis.
Graham, Joseph	North Carolina.	Acute Meningitis.
Greene, Marshall L.	Michigan.	Quiniæ Sulphas.
Gregory, Alfred B.	Georgia.	Intermittent Fever.
Gregory, Flavius J.	Virginia.	Mammary Abscess.
Gregory, Junius C.	Virginia.	Intermittent Fever.
Griffin, George G.	Georgia.	Hernia.
Grim, George W.	Pennsylvania.	Scutellaria Laterifolia.
Grooms, Stephen H.	Kentucky.	Scarlet Fever.
Gunn, Silas R.	Mississippi.	Duties of a Physician.
Gunn, William R.	Mississippi.	Femoral Hernia.
Hall, Joseph U.	California.	Climatology and Diseases of California.
Happersett, John C. G.	Pennsylvania.	Typhoid Fever.
Harper, Seborn A.	Mississippi.	Dysentery.
Harvey, Leon F.	New York.	Physical Exploration.
Hawthorn, Samuel W.	Virginia.	Abortion.
Henderson, Nat.	North Carolina.	Heterologous Formations.
Herrington, C. P.	Pennsylvania.	Cholera Infantum.
Hickman, Joseph T.	Virginia.	Simple Conjunctivitis.
Higgins, William F.	North Carolina.	Veratrum Viride.
Hillsman, John A.	Virginia.	Pneumonia.
Hines, Harvey L.	North Carolina.	Surgery.
Hines, William H.	Georgia.	Phthisis Pulmonalis.
Hite, Benjamin H.	Virginia.	Syphilis.
Hoard, Robert L.	Virginia.	Typhoid or Enteric Fever.
Hoffman, Robert H.	Virginia.	Digestion.
Holloway, Thomas P. (M. D.)	Kentucky.	Puerperal Fever.
Hopkins, James A.	North Carolina.	Veratrum Viride.
Hudgens, Thomas A.	South Carolina.	Menstruation.
Hudson, Gilbert L.	Georgia.	Mania a Potu.
Hull, John A.	Virginia.	Physiology of Digestion.
Hulse, John I. (M. D.)	Florida.	Yellow Fever.
Hunter, Horatio D.	Pennsylvania.	Intermittent Fever.
Jackson, John W.	North Carolina.	Bilious Remittent Fever.
Jackson, L. D.	Delaware.	Hæmoptysis.
Jackson, Thomas L.	Virginia.	Heterologous Formations.
Johnston, Thomas W.	North Carolina.	Pneumonia.
Jolly, M. A.	Alabama.	Honorable Medicine.
Jordan, Reuben Elm	Alabama.	Puerperal Uterine Hemorrhage.
Karsner, Charles	Pennsylvania.	Importance of a Medical Education
Keith, N. C.	Virginia.	Cholera Infantum.
Kelly, John B.	Alabama.	The Liver.
Kimbrough, Locket M.	Georgia.	Entero-mesenteric Fever.
King, George M.	Virginia.	The Pelvis.
Kirkwood, H.	Nova Scotia.	Dyspepsia.
Knorr, Matthias	Pennsylvania.	Inguinal Hernia.
Kuder, Joseph S.	Pennsylvania.	Prolapsus Uteri.
Lachenour, Henry D.	Pennsylvania.	Vaccination.
Leary, William B.	Virginia.	Mania a Potu.

NAME.	STATE OR COUNTRY.	SUBJECT OF THESIS.
Lide, William R.	Alabama.	Gastric Dyspepsia.
Lindsay, James E.	North Carolina.	Emphysema Vesiculare.
Linthicum, Rufus, Jr.	Kentucky.	Pneumonia.
Logan, John E.	North Carolina.	Cancer of the Stomach.
Longnecker, Benjamin F.	Illinois.	Heterologous Formations.
Magruder, George W.	Virginia.	Light, a Vital Stimulus.
Main, Elijah W.	New Jersey.	Chronic Hepatitis.
Maney, Samuel B.	Texas.	Jaundice.
Marbourg, M.	Pennsylvania.	Rubeola.
Marlow, Nicholas P.	Alabama.	A View of the Medical Profession.
Marshall, Samuel D.	Delaware.	Intermarriage.
Matlack, William H.	Pennsylvania.	Rubeola.
Maurer, Jacob S.	Pennsylvania.	Dysentery.
McCondichie, Wiley G.	Alabama.	Spermatorrhœa.
McCurdy, John M. (M. D.)	Ohio.	Pneumonia.
McEwen, Joseph W.	Pennsylvania.	Acute Rheumatism.
McFadyen, A. R.	North Carolina.	Dysentery.
McKinley, Charles A.	Georgia.	Gonorrhœa.
McLees, Joseph H.	South Carolina.	Hæmoptysis.
McMaster, James	Pennsylvania.	Scarlatina.
Mechling, John	Pennsylvania.	Diphtheritis.
Merritt, Daniel R., Jr.	Kentucky.	Cholera.
Miller, Thomas W.	Mississippi.	Remittent Fever.
Mitchell, William	Nova Scotia.	Erysipelas.
Mitchell, William G.	Kentucky.	Ovulation.
Monteith, William H.	Georgia.	Typhoid Fever.
Montfort, William J.	North Carolina.	Signs of Pregnancy.
Murfree, James B.	Tennessee.	Compound Fracture of the Thigh.
Murphy, Daniel	Pennsylvania.	Congestion.
Neal, Harrison	Pennsylvania.	Conservative Surgery.
Neel, James D.	South Carolina.	Cinchona.
Neff, Isaac P.	Pennsylvania.	Asphyxia.
Newcomer, David	Pennsylvania.	Podophyllum Peltatum.
Newell, Joseph B.	Georgia.	Fœtal Circulation.
Newell, William L.	New Jersey.	Necessity of Vigilance on the Part of the Physician.
Newton, Edwin D.	Georgia.	Phosphorus.
Nicholson, Malcolm J.	Georgia.	Chronic Dysentery.
Norris, J. W. Stump	Pennsylvania.	The Liver, its Structure and Functions.
Norwood, John	North Carolina.	Cystitis.
Nunnelee, Virgil T.	Georgia.	Alcohol, its Uses and Abuses.
Pancoast, George L. A.	Virginia.	Resections in Compound Fractures and Dislocations.
Parkes, A. H.	Tennessee.	Pertussis.
Parr, William P.	Indiana.	Influence of the Mind over the Body.
Peacock, John L. C.	Georgia.	Bilious Remittent Fever.
Perry, Turner Hunt	Alabama.	Acute Rheumatism.
Perry, Van Lear	Maryland.	Scarlatina.
Peyton, Edwin O.	Virginia.	Digestion.
Plimpton, Albert F.	Maine.	Delirium Tremens.
Potteiger, Jonathan B.	Pennsylvania.	Tonics.
Powell, William J.	Maryland.	Nicaragua.
Prentiss, John Hart	Maine.	Spermatorrhœa.
Prewitt, J. B.	Texas.	Pleuritis.
Purifoy, John H.	Alabama.	Aneurism.
Quinn, John P.	Dist. of Columbia.	Febris Intermittens.
Randolph, Lewis C.	Virginia.	Typhoid Fever.
Rea, Charles T. I.	Massachusetts.	Gonorrhœa.
Read, Clement H.	Virginia.	Inflammation.
Redd, John T.	Virginia.	Cholera Infantum.
Reddish, Thompson K.	Missouri.	Inflammation.
Reed, Thomas B.	Pennsylvania.	Fungi as a Cause of Fever, with a special notice of the Uredo Rubigo.
Richardson, David R.	Georgia.	Sterility.
Rigg, W. Cochrane	Kentucky.	Uterine Hemorrhage.
Roberts, Rufus A.	North Carolina.	Vis Medicatrix Naturæ.
Robertson, J. Royall	Virginia.	Hygiene.
Rodes, William R.	Missouri.	Physical Diagnosis.
Rogers, W. F.	Alabama.	Spermatorrhœa.
Rowe, Thomas	Virginia.	Anæsthesia.
Scott, Jesse F.	Kentucky.	Scarlatina.

NAME.	STATE OR COUNTRY.	SUBJECT OF THESIS.
Scott, Robert W.	Tennessee.	Fever.
Scruggs, Richard F.	Tennessee.	Inflammation.
Seip, William H.	Pennsylvania.	Entero-mesenteric Fever.
Shands, Thomas E.	Virginia.	Physiology of Digestion.
Sharp, William T.	Ohio.	Intermittent Fever.
Sheppard, James L.	North Carolina.	Pulvis Doveri.
Slaughter, Thomas G.	Alabama.	The Uterus.
Smith, A. Harvey	Canada West.	Water.
Smith, James	Pennsylvania.	Dysentery.
Snow, George W.	Massachusetts.	Primary Syphilis.
Somers, Job Braddock	New Jersey.	Atmospheric Air.
Spencer, R. M.	Virginia.	Dyspepsia.
Spicer, John Daniel	North Carolina.	Pregnancy, its Physiological and Pathological Phenomena.
Sprague, Albert G., Jr.	Rhode Island.	Constitutional Syphilis.
Stallings, C. H.	North Carolina.	Typhoid Fever.
Steele, A. J.	New York.	Fatty Degeneration of the Heart.
Stevenson, Joseph M.	Pennsylvania.	Encephaloid Cancer.
Stewart, David F.	Texas.	Obstetrical Duties in Natural Labor.
Stockdell, Hugh	Virginia.	Inflammation.
Sudler, Arthur E., Jr.	Maryland.	Malaria as a Cause of Disease.
Swayze, George B. H.	Pennsylvania.	Digitalis Purpurea.
Taylor, John H.	Maryland.	Malignant Remittent Fever.
Taylor, William H.	Kentucky.	Inflammation.
Thomas, Alfred N.	Mississippi.	Heterologous Formations.
Thrash, David E.	Alabama.	Enteric or Typhoid Fever.
Tracy, George P.	Pennsylvania.	Pneumonia.
Triplett, W. H.	Virginia.	Colchicum.
Vanhook, James D.	Kentucky.	Acute Pneumonia.
Waddill, John M.	Virginia.	Acute Pleurisy.
Walker, Charles W.	Virginia.	Oxygen.
Walker, George S.	Virginia.	Dysentery.
Walker, Walter	New York.	Cataract.
Walker, Z. J.	Virginia.	Pleuritis.
Walter, Barnet C.	Pennsylvania.	Variola.
Ward, Richard William	North Carolina.	Auscultation and Percussion.
Warren, A. L.	Alabama.	Catarrhal Fever.
Waugh, James R.	North Carolina.	Dysentery.
Welborn, William Pinckney	Indiana.	Milk Sickness.
Wells, Thomas	South Carolina.	Gonorrhœa.
West, Thomas S.	Mississippi.	Poisons.
Whitehead, Peter F.	Kentucky.	Cyanosis Neonatorum.
White, James A.	Tennessee.	Digestion.
White, Thomas C.	Mississippi.	Albuminuria.
Whitner, Hiram K.	Pennsylvania.	Noncontagiousness of Typhoid Fever.
Williams, John F.	Mississippi.	Chemical Affinity.
Williamson, John H.	North Carolina.	Veratrum Viride.
Williamson, Lea Z.	Mississippi.	True Aneurism.
Wilson, Adolphus J.	Alabama.	Bilious Remittent Fever.
Wilson, John B.	Maine.	Matter and Mind.
Wilson, L. James	Mississippi.	Pneumonia.
Winne, Charles K.	New York.	Control of Hemorrhage.
Wisely, Leonard A.	Missouri.	Intermittent Fever.
Wood, George J.	Ohio.	Cardiac Inflammation.
Young, Elisha	Alabama.	Traumatic Tetanus.
Young, Matthew H.	Kentucky.	The Blood.
Young, S. F.	Mississippi.	Gunshot Wounds.
Young, Thomas R.	Kentucky.	Intermittent Fever.

Of the above, there are from—

Virginia	47	Missouri	8	Florida	2
Pennsylvania	38	Maryland	4	Michigan	2
North Carolina	23	Ohio	4	Arkansas	2
Georgia	22	Texas	4	Canada West	2
Mississippi	18	Maine	3	Nova Scotia	2
Alabama	18	Indiana	3	Louisiana	1
Kentucky	15	New Jersey	3	Illinois	1
Tennessee	10	Delaware	3	District of Columbia	1
South Carolina	8	Rhode Island	2	California	1
New York	7	Massachusetts	2		

256

HARVARD UNIVERSITY.

SUMMER SESSION OF THE MEDICAL DEPARTMENT.

THE Annual Course of Summer Instruction, in this Institution, will commence on Monday, March 14th, 1859, at the Massachusetts Medical College, Boston, and continue eight months.

D. HUMPHREYS STORER, M. D.,	Professor of Obstetrics and Medical Jurisprudence.
JOHN B. S. JACKSON, M. D.,	Professor of Morbid Anatomy.
GEORGE C. SHATTUCK, M. D.,	Professor of Clinical Medicine, and Adjunct Professor of the Theory and Practice of Medicine.
OLIVER W. HOLMES, M. D.,	Professor of Anatomy and Physiology.
HENRY J. BIGELOW, M. D.,	Professor of Surgery and Clinical Surgery.
JOHN BACON, M. D.,	Professor of Chemistry.
EDWARD H. CLARKE, M. D.,	Professor of Materia Medica.

RICHARD M. HODGES, M. D., Demonstrator.

The Summer Session of the Medical Department, was instituted by the Corporation of Harvard College, in 1858, as an addition to the Annual Winter Course of Lectures, for the purpose of giving more thorough and systematic instruction in Medicine and Surgery. During the Summer Session instruction will be given at the College, by Recitations and Lectures upon all branches necessary to a Medical Education.—Besides instruction in the ordinary branches, Lectures will be delivered in the University on Comparative Anatomy, by Professor Wyman; on Botany, by Professor Gray; on Zoology, by Professor Agassiz; and on Acoustics and Optics, by Professor Lovering. To these lectures, gentlemen of the Medical Class will be admitted without extra charge.

Clinical Medicine and Surgery are taught at the bedside of the patient in the Massachusetts General Hospital.

Students are also admitted to the Medical and Surgical practice of the Boston Dispensary, where more than eight thousand patients were treated last year, and to the advantages of the Eye and Ear Infirmary.

The Dissecting Room is open till late in the Spring and again in the Autumn. The Demonstrator's Ticket and Hospital Ticket are included in the fee for the Summer Session. The months of August and September, are Vacation.

FEES.

For the Summer Session	$100 00 paid in advance.
For three Months	50 00 " " "

Fee for the Winter Term as heretofore.

D. HUMPHREYS STORER, Dean of the Faculty,
January 1, 1859.—2t. *No.* 132 *Tremont Street, Boston.*

MEDICAL COLLEGE OF VIRGINIA.

SESSION OF 1859-'60.

The Annual Course of Lectures will commence on the first Monday in October, and continue until the 1st of March.

CHARLES BELL GIBSON, M. D.,	Professor of Surgery and Surgical Anatomy.
DAVID H. TUCKER, M. D.,	Professor of Theory and Practice of Medicine.
BEVERLEY R. WELLFORD, M.D.,	Professor of Materia Medica and Therapeutics.
ARTHUR E. PETICOLAS, M. D.,	Professor of Anatomy.
LEVIN S. JOYNES, M. D.,	Professor of Institutes of Medicine and Medical Jurisprudence.
JAMES H. CONWAY, M. D.,	Professor of Obstetrics and Diseases of Women and Children.
JAMES B. McCAW, M. D.,	Professor of Chemistry and Pharmacy.
MARION HOWARD, M. D.,	Demonstrator of Anatomy.

The study of Practical Anatomy may be prosecuted with the most ample facilities, and at a very trifling expense.

Clinical Instruction will be given in the Infirmary connected with the College, which is under the same roof with the Lecture-rooms, and is at all times well filled with Medical and Surgical cases. Students also enjoy the Clinical facilities afforded by the Richmond Almshouse, which is under the medical charge of one of the Professors.

A Prize of *One Hundred Dollars*, offered by Dr. Thomas D. Warren, of North Carolina, will be awarded to the Member of the Graduating Class who shall present to the Faculty the *best Essay* on any medical subject.

FEES.—Matriculation, $5; Ticket of each Professor, $15; Graduation, $25.

L. S. JOYNES, M. D.,
Dean of the Faculty.

GRADUATES OF THE UNIVERSITY OF PENNSYLVANIA, 1859.

At a Public Commencement, held March 17th, 1859, in the Musical Fund Hall, the Degree of Doctor of Medicine was conferred by HENRY VETHAKE, L. L. D., Provost, upon the following gentlemen; after which an Address was delivered by HENRY H. SMITH, M. D., Professor of Surgery.

NAME.	TOWN OR P. O.	COUNTY.	STATE.	SUBJECT OF THESIS.
Albright, John S.	Coopersburg,	Lehigh,	Pa.	Sleep, Psychologically and Pathologically considered.
Alston, Solomon W.	Arcola,	Warren,	N. C.	Diaphoretics.
Arjona, Joseph E.	Panama,		Panama.	Pneumonia.
Asay, J. Lambert	Philadelphia,		Pa.	Dentition.
Barnes, Benj. S.	Suggsville,	Clarke,	Ala.	The Ready Method in Asphyxia.
Bateman, Robert M.	Cedarville,	Cumberland,	N. J.	Morbi Cervicis Uteri.
Baylor, John C.	Norfolk,	Norfolk,	Va.	Endocarditis.
Beall, James W.	Hernando,	De Soto,	Miss.	Scarlatina.
Bergin, Thomas J.	Easton,	Northampton,	Pa.	Dysentery.
Black, Charles A.	Sackville,	Westmoreland,	N. B.	Nausea Marina.
Blake, Amaza	Lowell,	Washington,	Ohio.	Enteric Fever.
Bost, J. L.	Olive Branch,	Union,	N. C.	Enteric Fever.
Brincklé, Samuel C.	Philadelphia,		Pa.	The Treatment of Burns and Scalds.
Burg, Washington	Manor,	Lancaster,	Pa.	Typhus Fever.
Calhoun, J. Theodore	Rahway,	Middlesex,	N. J.	Railroad Surgery.
Campbell, Samuel A.	Daleville,	Lauderdale,	Miss.	Erysipelas.
Campbell, Samuel W.	Tamola,	Kemper,	Miss.	The Medical Man.
Cannady, Isaac G.	Tranquillity,	Granville,	N. C.	Amenorrhœa.
Carter, M. B.	Henrico,	Henrico,	Va.	Gonorrhœa.
Cavett, Thos. M.	Collinsburg,	Bossier Par.,	La.	Inguinal Hernia.
Childers, Jabes V.	Pulaski,	Giles,	Tenn.	Acute Dysentery.
Clardy, T. Fleming	Blandville,	Ballard,	Ky.	Acute Colo-Rectitis.
Clarkson, Henry M.	Columbia,	Richland Dist.,	S. C.	Life, Vegetable and Animal.
Clements, M. Joseph	Rockville,	Montgomery,	Md.	Scarlatina.
Coleman, Thos. P.	Concord,	Cabarrus,	N. C.	Acute Dysentery.
Coates, Isaac T.	Chester,	Delaware,	Pa.	Mind-Electricity; Matter as Cause, Medium, Effect.
Coates, Louis Montgomery	Philadelphia,		Pa.	
Cook, Thomas C.	Fairfield,	Pickens,	Ala.	Pernicious Fever.
Cotter, Wm. A.	Bullock's Creek,	York Dist.,	S. C.	Hygiene.
Cox, John	Philadelphia,		Pa.	Aphonia.
Craigen, Wm. J.	Washington City,		D. C.	The Menses—a Secretion or Hemorrhage.
Cropp, William W.	Conrad's Store,	Rockingham,	Va.	Enteric Fever.
Cruice, Robert B.	Philadelphia,		Pa.	Special and Surgical Anatomy of the Neck.
Davis, Edward B.	Horn Lake,	De Soto,	Miss.	Scarlatina.
Dick, Leonard W.	Sumter,	Sumter Dist.,	S. C.	Indications of the Tongue in Disease.
Dunlap, R. S.	Clinton,	Laurens Dist.,	S. C.	Opium.
Edwards, Thos. H.	Newport,	Waukulla,	Fla.	Luxations.
Egle, William H.	Harrisburg,	Dauphin,	Pa.	Recent Contributions to Therapeutics and Pharmacy.
Elliott, Samuel A.	Meadville,	Crawford,	Pa.	Diagnosis.
Faison, Thomas I.	La Grange,	Fayette,	Tenn.	Intermittent Fever.
Flowers, Samuel B.	Mt. Olive,	Wayne,	N. C.	Oleum Terebinthinæ.
Frazee, John M.	Germantown,	Mason,	Ky.	Fever.
Freeman, Robert J.	Norfolk,	Norfolk,	Va.	Acute Pericarditis.
Fryer, Blencowe E.	Germantown,	Philadelphia,	Pa.	The Constituents of the Blood.
Garretson, James E.	Philadelphia,		Pa.	Odontalgia.
Goodman, H. Earnest	Germantown,	Philadelphia,	Pa.	Necrosis.
Gordon, DeWitt C.	Pulaski,	Giles,	Tenn.	Dysentery.
Gregory, G. Charles S.	Enfield,	Halifax,	N. C.	Abortion.
Grigsby, A. S., jr.	Centreville,	Fairfax,	Va.	Hernia.

NAME.	TOWN OR P. O.	COUNTY.	STATE.	SUBJECT OF THESIS.
Harrell, Oscar F.	Selma,	Dallas,	Ala.	Cinires Vitis Vini-feræ as a Remedy.
Harris, A. S.	Louisburg,	Franklin,	N. C.	Enteric Fever.
Higdon, John M.	Holly Springs,	Marshall,	Miss.	Digestion.
Hobbs, Isaac M.	Clinton,	Sampson,	N. C.	Fever.
Holt, Jacob F.	Greenfield,	Hillsboro',	N. H.	Pulmonary Tubercle.
Hooff, James H.	Point Pleasant,	Mason,	Va.	Tetanus.
Hostetter, John	St. Catharine's,	Lincoln,	Can. West.	Fibrin of Blood physiologically considered.
Jacobs, John C.	Jackson,	Northampton,	N. C.	Quinine in Typhus Fever.
James, Henry C.	Melburn,	Ballard,	Ky.	Intermittent Fever in Western Kentucky.
Kaufman, John F.	Philadelphia,		Pa.	Glycerina.
Kepler, Samuel, jr.	Baltimore,		Md.	Influence of the Mind on Body affecting Health and Disease.
Kirkland, John R.	Warsaw,	Sumter,	Ala.	Pneumonia.
Klapp, Henry Milnor	Philadelphia,		Pa.	Delirium Tremens.
Koller, Noah	Bloomville,	Seneca,	Ohio.	The Circulation.
Laurence, A. A.	Statesville,	Iredell,	N. C.	Liberal Intellectual Culture indispensable to the successful Study of Medicine.
Lee, Chas. Carroll	Petersville,	Frederick,	Md.	Correlation of Physical and Organic Forces.
Leedom, J. Moore	Germantown,	Philadelphia,	Pa.	Lithiasis.
Leidy, Philip, jr.	Philadelphia,		Pa.	Dentition.
Leinbach, A. N.	Salem,	Forsythe,	N. C.	Scrofulous Diseases of Joints in Children.
Leiper, A. K.	Hookstown,	Beaver,	Pa.	Pneumonia.
Lewis, David Thacker	Philadelphia,		Pa.	
Martin, Dewees J.	Allentown,	Lehigh,	Pa.	Pharmacy.
Martindale, Jos. C.	Byberry,	Philadelphia,	Pa.	Water—its Uses and Effects.
Maxwell, J. Chappell	Chappell's Depot,	Newberry Dist.,	S. C.	Uric Acid.
Mayes, James M.	Boligee,	Green,	Ala.	Enteric Fever.
Mayo, Peyton H.	Tawboro',	Edgecomb,	N. C.	Pernicious Fever.
McCauley, James D.	Blue Ball,	Cecil,	Md.	The Duties of a Physician.
McClanahan, S. R.	Magnolia,	Anderson,	Texas.	Differential Diagnosis of Enteric Fever.
Means, T. Sumter	Glenn's Springs,	Spartanburg Dist.,	S. C.	The Duties of the Physician.
Means, Theophilus H.	Charlotte,	Mecklenburg,	N. C.	Erysipelas.
Mears, J. Howell	Branchtown,	Philadelphia,	Pa.	Disease.
Melvin, Walter	Chestertown,	Kent,	Md.	Thesis Writing.
Micks, Thomas R.	Clinton,	Sampson,	N. C.	Rubeola.
Moore, Joseph	Amherst,	Cumberland,	No. Scotia,	Dyspepsia.
Morton, Samuel	Clinton,	Green,	Ala.	Gastritis.
Moseley, George W.	Clinton,	Sampson,	N. C.	Sporadic Cholera.
Newell, William H.	Frederick,	Frederick,	Md.	Professionis Medicæ Dignitas.
Newsome, James E.	Winton,	Hertford,	N. C.	Puerperal Convulsions.
Oliver, George P.	Philadelphia,		Pa.	Puerperal Convulsions.
Palmer, Horace	Sumerville,	Fayette,	Tenn.	Hepatitis.
Pancoast, D. Parrish	Philadelphia,		Pa.	Ætiologia Æsthetica.
Perry, Alexander	Portsmouth,	Norfolk,	Va.	Remittent Fever.
Perry, S. Williams	Warrenton,	Warren,	N. C.	The Therapeutical Application of Oleum Terebinthinæ.
Pool, John H.	Elizabeth City,	Pasquotank,	N. C.	Influenza.
Porter, Felix F.	Manlyville,	Henry,	Tenn.	Pathology and Diagnosis of Fever.
Ramsay, Junius N.	Jackson,	Northampton,	N. C.	Intermittent Fever.
Reily, James R.	Washington City,		D. C.	Acute Colo-Rectitis.
Riddick, Joseph H.	Hertford,	Perquimans,	N. C.	Malarial Pneumonia.

NAME.	TOWN OR P. O.	COUNTY.	STATE.	SUBJECT OF THESIS.
Richmond, Leonidas	Holly Springs,	Marshall,	Miss.	Sulphate of Quinia.
Riggs, Benj. H.	Selma,	Dallas,	Ala.	The Microcosm.
Robinson, William T.	Philadelphia,		Pa.	Audition.
Rodenstein, Louis A.	Dallas,	Dallas,	Texas.	Yellow Fever.
Rose, Joseph G.	Bentonsville,	Johnston,	N. C.	Cinchona.
Ross, G. A.	Yorkville,	York Dist.,	S. C.	Inflammation.
Rountree, F. M.	Pleasant Mount,	Pitt,	N. C.	Therapeutical Applications of Sulphate of Quinia.
Rowland, Melson L.	Philadelphia,		Pa.	Transfusion of Blood.
Sadler, Wm. King	Oxford,	Butler,	Ohio,	Science versus Empiricism—a Poem.
Schaffer, Charles	Philadelphia,		Pa.	Experiments on Heart's Action.
Schmid, H. Ernst	White Post,	Clarke,	Va.	Disease a Product of Cell Action.
Searle, Wm. S.	Utica,	Oneida,	N. Y.	A review of Draper's Physiology.
Shannon, J. Clement	Elizabeth City,	Pasquotank,	N. C.	Acute Dysentery.
Simpson, Doctor J.	Cross Hill,	Laurence Dis.	S. C.	De Anatomiâ et Physiologiâ Uteri.
Smith, Henning M.	Franklin,	Southampton,	Va.	Pernicious Fever.
Smith, James M.	Vicksburg,	Warren,	Miss.	Intermittent Fever.
Smith, Philip W.	Georgetown,	Sussex,	Del.	Typhus Fever.
Stuart, W. C.	Olive Branch,	De Soto,	Miss.	Calomel.
Sutphen, John C.	Lesser X Roads,	Somerset,	N. J.	Hydrargyri Chloridum mite.
Taylor, William A.	Pittsboro',	Chatham,	N. C.	Scarlatina.
Thomas, Benj. H.	Ringgold,	Montgomery,	Tenn.	Chronic Peritonitis.
Thomas, Columbus A.	Cedar Rock,	Franklin,	N. C.	Pernicious Fever.
Thompson, Jacob A.	Leasburg,	Caswell,	N. C.	Epidemic Erysipelas.
Thompson, Joseph W.	Lovelaceville,	Ballard,	Ky.	Neuralgia.
Thompson, V. Oscar	Henderson,	Warren,	N. C.	Papaver Somniferum—liquid preparations, Morphia and Salts.
Thomson, Thomas S.	Fort Motte,	St. Matthew's,	S. C.	Typhoid Pneumonia.
Thorp, Henry R.	Brownsville,	Haywood,	Tenn.	Enteric Fever.
Tilton, Henry R.	Barnegat,	Ocean,	N. J.	Emetics and their Mode of Action.
Tomlinson, Thomas H.	Roadstown,	Cumberland,	N. J.	Infantile Hygiene.
Tremaine, William S.	Halifax,	Nova Scotia,		Woman—Physically and Mentally.
Usher, Francis M.	Newstead,	Christian,	Ky.	Phthisis Pulmonalis.
Usher, James H., Jr.	Newstead,	Christian,	Ky.	Qualities and Acquirements of a Physician.
Wallace, Alfred	Columbia,	Richland Dis.	S. C.	Coup-de-Soleil.
Wedgeworth, Ste'n B.	Eutaw,	Green,	Ala.	Pneumonia.
Welch, William M.	Bethlehem,	Hunterdon,	N. J.	The Germ as an essential Condition of Life.
Whiting, John C.	Mobile,	Mobile,	Ala.	Yellow Fever.
Wilkerson, Benj. C.	Blue Wing,	Person,	N. C.	Syphilis.
Wilkerson, Thomas B.	Buchanan,	Granville,	N. C.	Enteric Fever.
Williams, Rush F.	Farmington,	Davie,	N. C.	Medical Topography and Enteric Fever.
Woodhull, Alfred A.	Princeton,	Mercer,	N. J.	The Pilgrims' Progress.
Woolverton, James	Trenton,	Mercer,	N. J.	Diagnosis.
Woolverton, Joseph W.	Trenton,	Mercer,	N. J.	Bloodletting and its Substitutes.
Wortabet, Gregory M.	Beyrout,		Syria.	Syria—its Diseases and Drugs.

At a public Commencement, held July, 1858, the Degree of Doctor of Medicine was conferred upon—

NAME.	TOWN OR P. O.	COUNTY.	STATE.	SUBJECT OF THESIS.
Carman, Benj. R.	Philadelphia,		Pa.	Miasmata.
Coggeshall, George R.	Darlington C. H.	Darlington,	S. C.	Typhus Fever.
Martin, Chesley	Pittsylvania C. H.	Pittsylvania,	Va.	Medicine.
Shields, J. Hayes	Coatesville,	Chester,	Pa.	Scarlatina.

BLANCHARD & LEA'S
MEDICAL AND SURGICAL PUBLICATIONS.

TO THE READERS OF THE MEDICAL JOURNAL.

In the present catalogue we have affixed prices to our publications, in obedience to the repeated requests of numerous members of the profession. While books, like all other articles, must necessarily vary somewhat in cost throughout the extended territories of this country, yet our publications will generally be furnished at these rates by booksellers throughout the Union, who can readily and speedily procure any which they may not have on hand.

To accommodate those physicians who have not convenient access to bookstores, or who cannot order through merchants visiting the larger cities, we will forward our works by mail, *free of postage*, on receipt of the printed prices in current funds or postage stamps. As our business is wholesale, and we open accounts with booksellers only, the amount must in every case, without exception, accompany the order, and we can assume no risks of the mail, either on the money or the books; and as we sell only our own publications, we can supply no others. Physicians will, therefore, see the convenience and advantage of making their purchases, whenever practicable, from the nearest bookseller.

We can only add that no exertions are spared to merit a continuance of the gratifying confidence hitherto manifested by the profession in all works bearing our imprint.

BLANCHARD & LEA.

PHILADELPHIA, April, 1859.

*** We have just ready a new ILLUSTRATED CATALOGUE of our Medical and Scientific Publications, forming an octavo pamphlet of 80 large pages, containing specimens of illustrations, notices of the medical press, &c. &c. It has been prepared without regard to expense, and will be found one of the handsomest specimens of typographical execution as yet presented in this country. Copies will be sent to any address, by mail, free of postage, on receipt of nine cents in stamps.

Catalogues of our numerous publications in miscellaneous and educational literature forwarded on application.

TWO MEDICAL PERIODICALS, FREE OF POSTAGE,
FOR FIVE DOLLARS PER ANNUM.

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES, subject to postage, when not paid for in advance, - - - - - - - - $5 00

THE MEDICAL NEWS AND LIBRARY, invariably in advance, - - 1 00

or, BOTH PERIODICALS furnished, FREE OF POSTAGE, for Five Dollars remitted in advance.

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES,
EDITED BY ISAAC HAYS, M. D.,

is published Quarterly, on the first of January, April, July, and October. Each number contains at least two hundred and eighty large octavo pages, handsomely and appropriately illustrated, wherever necessary. It has now been issued regularly for more than THIRTY-FIVE years, and it has been under the control of the present editor for more than a quarter of a century. Throughout this long period, it has maintained its position in the highest rank of medical periodicals both at home and abroad, and has received the cordial support of the entire profession in this country. Its list of Collaborators will be found to contain a large number of the most distinguished names of the profession in every section of the United States, rendering the department devoted to

ORIGINAL COMMUNICATIONS

full of varied and important matter, of great interest to all practitioners.

As the aim of the Journal, however, is to combine the advantages presented by all the differ nt varieties of periodicals, in its

REVIEW DEPARTMENT

will be found extended and impartial reviews of all important new works, presenting subjects of novelty and interest, together with very numerous

BIBLIOGRAPHICAL NOTICES,

including nearly all the medical publications of the day, both in this country and Great Britain, with a choice selection of the more important continental works. This is followed by the

QUARTERLY SUMMARY,

being a very full and complete abstract, methodically arranged, of the

IMPROVEMENTS AND DISCOVERIES IN THE MEDICAL SCIENCES.

This department of the Journal, so important to the practising physician, is the object of especial care on the part of the editor. It is classified and arranged under different heads, thus facilitating the researches of the reader in pursuit of particular subjects, and will be found to present a very full and accurate digest of all observations, discoveries, and inventions recorded in every branch of medical science. The very extensive arrangements of the publishers are such as to afford to the editor complete materials for this purpose, as he not only regularly receives

ALL THE AMERICAN MEDICAL AND SCIENTIFIC PERIODICALS,

but also twenty or thirty of the more important Journals issued in Great Britain and on the Continent, thus enabling him to present in a convenient compass a thorough and complete abstract of everything interesting or important to the physician occurring in any part of the civilized world.

To their old subscribers, many of whom have been on their list for twenty or thirty years, the publishers feel that no promises for the future are necessary; but those who may desire for the first time to subscribe, can rest assured that no exertion will be spared to maintain the Journal in the high position which it has occupied for so long a period.

By reference to the terms it will be seen that, in addition to this large amount of valuable and practical information on every branch of medical science, the subscriber, by paying in advance, becomes entitled, without further charge, to

THE MEDICAL NEWS AND LIBRARY,

a monthly periodical of thirty-two large octavo pages. Its "News Department" presents the current information of the day, while the "Library Department" is devoted to presenting standard works on various branches of medicine. Within a few years, subscribers have thus received, without expense, the following works which have passed through its columns:—

WATSON'S LECTURES ON THE PRACTICE OF PHYSIC.
BRODIE'S CLINICAL LECTURES ON SURGERY.
TODD AND BOWMAN'S PHYSIOLOGICAL ANATOMY AND PHYSIOLOGY OF MAN.
WEST'S LECTURES ON THE DISEASES OF INFANCY AND CHILDHOOD.
MALGAIGNE'S OPERATIVE SURGERY, with wood-cuts.
SIMON'S LECTURES ON GENERAL PATHOLOGY.
BENNETT ON PULMONARY TUBERCULOSIS, with wood-cuts,
WEST ON ULCERATION OF THE OS UTERI,
BROWN ON THE SURGICAL DISEASES OF FEMALES, with wood-cuts, and
WEST ON DISEASES OF WOMEN, Part I. (See p. 32.)

While in the number for January, 1858, is commenced a new and highly important work,

HABERSHON ON DISEASES OF THE ALIMENTARY CANAL.

It will be seen that this treatise covers the whole ground of affections of the Digestive Organs, which furnish so very large a portion of the daily practice of the physician. The author's position in Guy's Hospital, and the fact that the work has only just appeared in London, are sufficient guarantee that it is up to the hour, and presents the most advanced condition of this department of medical science, while its thorough practical character is manifested by the great number of cases on which it is founded, no less than one hundred and sixty-three being carefully analyzed in all their details, throughout its pages. It is therefore hoped that it will be found to fully maintain the valuable practical character of the works heretofore presented to subscribers through this medium.

It will thus be seen that for the small sum of FIVE DOLLARS, paid in advance, the subscriber will obtain a Quarterly and a Monthly periodical,

EMBRACING NEARLY SIXTEEN HUNDRED LARGE OCTAVO PAGES,

mailed to any part of the United States, free of postage.

These very favorable terms are now presented by the publishers with the view of removing all difficulties and objections to a full and extended circulation of the Medical Journal to the office of every member of the profession throughout the United States. The rapid extension of mail facilities will now place the numbers before subscribers with a certainty and dispatch not heretofore attainable; while by the system now proposed, every subscriber throughout the Union is placed upon an equal footing, at the very reasonable price of Five Dollars for two periodicals, without further expense.

Those subscribers who do not pay in advance will bear in mind that their subscription of Five Dollars will entitle them to the Journal only, without the News, and that they will be at the expense of their own postage on the receipt of each number. The advantage of a remittance when ordering the Journal will thus be apparent.

As the Medical News and Library is in no case sent without advance payment, its subscribers will always receive it free of postage.

Remittances of subscriptions can be mailed at our risk, when a certificate is taken from the Postmaster that the money is duly inclosed and forwarded.

Address BLANCHARD & LEA, Philadelphia.

ALLEN (J. M.), M. D.,

Professor of Anatomy in the Pennsylvania Medical College, &c.

THE PRACTICAL ANATOMIST; or, The Student's Guide in the Dissecting-ROOM. With 266 illustrations. In one handsome royal 12mo. volume, of over 600 pages, leather. $2 25.

In the arrangement of this work, the author has endeavored to present a complete and thorough course of dissections in a clearer and more available form for practical use, than has as yet been accomplished. The chapters follow each other in the order in which dissections are usually conducted in this country, and as each region is taken up, every detail regarding it is fully described and illustrated, so that the student is not interrupted in his labors, by the necessity of referring from one portion of the volume to another.

However valuable may be the "Dissector's Guides" which we, of late, have had occasion to notice, we feel confident that the work of Dr. Allen is superior to any of them. We believe with the author, that none is so fully illustrated as this, and the arrangement of the work is such as to facilitate the labors of the student in acquiring a thorough practical knowledge of Anatomy. We most cordially recommend it to their attention.—*Western Lancet*, Dec. 1856.

We believe it to be one of the most useful works upon the subject ever written. It is handsomely illustrated, well printed, and will be found of convenient size for use in the dissecting-room.—*Med. Examiner*, Dec. 1856.

From Prof. J. S. Davis, University of Va.

I am not acquainted with any work that attains so fully the object which it proposes.

From C. P. Fanner, M. D., Demonstrator, University of Michigan.

I have examined the work briefly, but even this examination has convinced me that it is an excellent guide for the Dissector. Its illustrations are beautiful, and more than I have seen in a work of this kind. I shall take great pleasure in recommending it to my classes as *the text-book of the dissecting-room.*

ANALYTICAL COMPENDIUM

OF MEDICAL SCIENCE, containing Anatomy, Physiology, Surgery, Midwifery, Chemistry, Materia Medica, Therapeutics, and Practice of Medicine. By JOHN NEILL, M. D., and F. G. SMITH, M. D. New and enlarged edition, one thick volume royal 12mo. of over 1000 pages, with 374 illustrations. $3 00. ☞ See NEILL, p. 24.

ABEL (F. A.), F. C. S. AND C. L. BLOXAM.

HANDBOOK OF CHEMISTRY, Theoretical, Practical, and Technical; with a Recommendatory Preface by Dr. HOFMANN. In one large octavo volume, extra cloth, of 662 pages, with illustrations. $3 25.

ASHWELL (SAMUEL), M. D.,

Obstetric Physician and Lecturer to Guy's Hospital, London.

A PRACTICAL TREATISE ON THE DISEASES PECULIAR TO WOMEN. Illustrated by Cases derived from Hospital and Private Practice. Third American, from the Third and revised London edition. In one octavo volume, extra cloth, of 528 pages. $3 00.

The most useful practical work on the subject in the English language.—*Boston Med. and Surg. Journal.*

The most able, and certainly the most standard and practical, work on female diseases that we have yet seen.—*Medico-Chirurgical Review.*

ARNOTT (NEILL), M. D.

ELEMENTS OF PHYSICS; or Natural Philosophy, General and Medical. Written for universal use, in plain or non-technical language. A new edition, by ISAAC HAYS, M. D. Complete in one octavo volume, leather, of 484 pages, with about two hundred illustrations. $2 50.

BUDD (GEORGE), M. D., F. R. S.,

Professor of Medicine in King's College, London.

ON DISEASES OF THE LIVER. Third American, from the third and enlarged London edition. In one very handsome octavo volume, extra cloth, with four beautifully colored plates, and numerous wood-cuts. pp. 500. $3 00. (*Just Issued.*)

Has fairly established for itself a place among the classical medical literature of England.—*British and Foreign Medico-Chir. Review*, July, 1857.

Dr. Budd's Treatise on Diseases of the Liver is now a standard work in Medical literature, and during the intervals which have elapsed between the successive editions, the author has incorporated into the text the most striking novelties which have characterized the recent progress of hepatic physiology and pathology; so that although the size of the book is not perceptibly changed, the history of liver diseases is made more complete, and is kept upon a level with the progress of modern science. It is the best work on Diseases of the Liver in any language.—*London Med. Times and Gazette*, June 27, 1857.

This work, now the standard book of reference on the diseases of which it treats, has been carefully revised, and many new illustrations of the views of the learned author added in the present edition.—*Dublin Quarterly Journal*, Aug. 1857.

BY THE SAME AUTHOR.

ON THE ORGANIC DISEASES AND FUNCTIONAL DISORDERS OF THE STOMACH. In one neat octavo volume, extra cloth. $1 50.

From the high position occupied by Dr. Budd as a teacher, a writer, and a practitioner, it is almost needless to state that the present book may be consulted with great advantage. It is written in an easy style, the subjects are well arranged, and the practical precepts, both of diagnosis and treatment, denote the character of a thoughtful and experienced physician.—*London Med. Times and Gazette.*

BUCKNILL (J. C.), M. D.,
Medical Superintendent of the Devon County Lunatic Asylum; and
DANIEL H. TUKE, M. D.,
Visiting Medical Officer to the York Retreat.

A MANUAL OF PSYCHOLOGICAL MEDICINE; containing the History, Nosology, Description, Statistics, Diagnosis, Pathology, and Treatment of INSANITY. With a Plate. In one handsome octavo volume, of 536 pages. $3 00. (*Now Ready*, July, 1858.)

The increase of mental disease in its various forms, and the difficult questions to which it is constantly giving rise, render the subject one of daily enhanced interest, requiring on the part of the physician a constantly greater familiarity with this, the most perplexing branch of his profession. At the same time there has been for some years no work accessible in this country, presenting the results of recent investigations in the Diagnosis and Prognosis of Insanity, and the greatly improved methods of treatment which have done so much in alleviating the condition or restoring the health of the insane. To fill this vacancy the publishers present this volume, assured that the distinguished reputation and experience of the authors will entitle it at once to the confidence of both student and practitioner. Its scope may be gathered from the declaration of the authors that "their aim has been to supply a text book which may serve as a guide in the acquisition of such knowledge, sufficiently elementary to be adapted to the wants of the student, and sufficiently modern in its views and explicit in its teaching to suffice for the demands of the practitioner."

BENNETT (J. HUGHES), M. D., F. R. S. E.,
Professor of Clinical Medicine in the University of Edinburgh, &c.

THE PATHOLOGY AND TREATMENT OF PULMONARY TUBERCULOSIS, and on the Local Medication of Pharyngeal and Laryngeal Diseases frequently mistaken for or associated with, Phthisis. One vol. 8vo., extra cloth, with wood-cuts. pp. 130. $1 25.

BENNETT (HENRY), M. D.

A PRACTICAL TREATISE ON INFLAMMATION OF THE UTERUS, ITS CERVIX AND APPENDAGES, and on its connection with Uterine Disease. New and much enlarged edition, preparing by the author for publication in 1859.

We are firmly of opinion that in proportion as a knowledge of uterine diseases becomes more appreciated, this work will be proportionably established as a text-book in the profession.—*The Lancet.*

When, a few years back, the first edition of the present work was published, the subject was one almost entirely unknown to the obstetrical celebrities of the day; and even now we have reason to know that the bulk of the profession are not fully alive to the importance and frequency of the disease of which it takes cognizance. The present edition is so much enlarged, altered, and improved, that it can scarcely be considered the same work.—*Dr. Ranking's Abstract.*

BY THE SAME AUTHOR.

A REVIEW OF THE PRESENT STATE OF UTERINE PATHOLOGY. 8vo., 75 pages, flexible cloth, 50 cents.

BIRD (GOLDING), A. M., M. D., &c.

URINARY DEPOSITS: THEIR DIAGNOSIS, PATHOLOGY, AND THERAPEUTICAL INDICATIONS. A new and enlarged American, from a late improved London edition. With over sixty illustrations. In one royal 12mo. vol, extra cloth. pp. 372. $1 30.

It can scarcely be necessary for us to say anything of the merits of this well-known Treatise, which so admirably brings into practical application the results of those microscopical and chemical researches regarding the physiology and pathology of the urinary secretion, which have contributed so much to the increase of our diagnostic powers, and to the extension and satisfactory employment of our therapeutic resources. In the preparation of this new edition of his work, it is obvious that Dr. Golding Bird has spared no pains to render it a faithful representation of the present state of scientific knowledge on the subject it embraces.—*The British and Foreign Medico-Chirurgical Review.*

BOWMAN (JOHN E.), M. D.

PRACTICAL HANDBOOK OF MEDICAL CHEMISTRY. Second American, from the third and revised English Edition. In one neat volume, royal 12mo., extra cloth, with numerous illustrations. pp. 288. $1 25.

BY THE SAME AUTHOR.

INTRODUCTION TO PRACTICAL CHEMISTRY, INCLUDING ANALYSIS. Second American, from the second and revised London edition. With numerous illustrations. In one neat vol., royal 12mo., extra cloth. pp. 350. $1 25.

BEALE ON THE LAWS OF HEALTH IN RELATION TO MIND AND BODY. A Series of Letters from an old Practitioner to a Patient. In one volume, royal 12mo., extra cloth. pp. 296. 80 cents.

BUSHNAN'S PHYSIOLOGY OF ANIMAL AND VEGETABLE LIFE; a Popular Treatise on the Functions and Phenomena of Organic Life. In one handsome royal 12mo. volume, extra cloth, with over 100 illustrations. pp. 234. 80 cents.

BUCKLER ON THE ETIOLOGY, PATHOLOGY, AND TREATMENT OF FIBRO-BRONCHITIS AND RHEUMATIC PNEUMONIA. In one 8vo. volume, extra cloth. pp. 150. $1 25.

BLOOD AND URINE (MANUALS ON). BY JOHN WILLIAM GRIFFITH, G. OWEN REESE, AND ALFRED MARKWICK. One thick volume, royal 12mo., extra cloth, with plates. pp. 460. $1 25.

BRODIE'S CLINICAL LECTURES ON SURGERY. 1 vol. 8vo. cloth. 350 pp. $1 25.

BARCLAY (A. W.) M. D.,

Assistant Physician to St. George's Hospital, &c.

A MANUAL OF MEDICAL DIAGNOSIS; being an Analysis of the Signs and Symptoms of Disease. In one neat octavo volume, extra cloth, of 424 pages. $2 00. (*A new work, now ready.*)

Of works exclusively devoted to this important branch, our profession has at command, comparatively, but few, and, therefore, in the publication of the present work, Messrs. Blanchard & Lea have conferred a great favor upon us. Dr. Barclay, from having occupied, for a long period, the position of Medical Registrar at St. George's Hospital, possessed advantages for correct observation and reliable conclusions, as to the significance of symptoms, which have fallen to the lot of but few, either in his own or any other country. He has carefully systematized the results of his observation of over twelve thousand patients, and by his diligence and judicious classification, the profession has been presented with the most convenient and reliable work on the subject of Diagnosis that it has been our good fortune ever to examine; we can, therefore, say of Dr. Barclay's work, that, from his systematic manner of arrangement, his work is one of the best works "for reference" in the daily emergencies of the practitioner, with which we are acquainted; but, at the same time, we would recommend our readers, especially the younger ones, to read thoroughly and study diligently the *whole* work, and the "emergencies" will not occur so often.—*Southern Med. and Surg. Journ.*, March, 1858.

To give this information, to supply this admitted deficiency, is the object of Dr. Barclay's Manual. The task of composing such a work is neither an easy nor a light one; but Dr. Barclay has performed it in a manner which meets our most unqualified approbation. He is no mere theorist; he knows his work thoroughly, and in attempting to perform it, has not exceeded his powers.—*British Med. Journal*, Dec. 5, 1857.

We venture to predict that the work will be deservedly popular, and soon become, like Watson's Practice, an indispensable necessity to the practitioner.—*N. A. Med. Journal*, April, 1858.

An inestimable work of reference for the young practitioner and student.—*Nashville Med. Journal*, May, 1858.

We hope the volume will have an extensive circulation, not among students of medicine only, but practitioners also. They will never regret a faithful study of its pages.—*Cincinnati Lancet*, Mar. '58.

This Manual of Medical Diagnosis is one of the most scientific, useful, and instructive works of its kind that we have ever read, and Dr. Barclay has done good service to medical science in collecting, arranging, and analyzing the signs and symptoms of so many diseases.—*N. J. Med. and Surg. Reporter*, March, 1858.

BARLOW (GEORGE H.), M. D.

Physician to Guy's Hospital, London, &c.

A MANUAL OF THE PRACTICE OF MEDICINE. With Additions by D. F. Condie, M. D., author of "A Practical Treatise on Diseases of Children," &c. In one handsome octavo volume, leather, of over 600 pages. $2 75.

We recommend Dr. Barlow's Manual in the warmest manner as a most valuable vade-mecum. We have had frequent occasion to consult it, and have found it clear, concise, practical, and sound. It is eminently a practical work, containing all that is essential, and avoiding useless theoretical discussion. The work supplies what has been for some time wanting, a manual of practice based upon modern discoveries in pathology and rational views of treatment of disease. It is especially intended for the use of students and junior practitioners, but it will be found hardly less useful to the experienced physician. The American editor has added to the work three chapters—on Cholera Infantum, Yellow Fever, and Cerebro-spinal Meningitis. These additions, the two first of which are indispensable to a work on practice destined for the profession in this country, are executed with great judgment and fidelity, by Dr. Condie, who has also succeeded happily in imitating the conciseness and clearness of style which are such agreeable characteristics of the original book.—*Boston Med. and Surg. Journal.*

BARTLETT (ELISHA), M. D.

THE HISTORY, DIAGNOSIS, AND TREATMENT OF THE FEVERS OF THE UNITED STATES. A new and revised edition. By Alonzo Clark, M. D., Prof. of Pathology and Practical Medicine in the N. Y. College of Physicians and Surgeons, &c. In one octavo volume, of six hundred pages, extra cloth. Price $3 00.

It is the best work on fevers which has emanated from the American press, and the present editor has carefully availed himself of all information existing upon the subject in the Old and New World, so that the doctrines advanced are brought down to the latest date in the progress of this department of Medical Science.—*London Med. Times and Gazette*, May 2, 1857.

This excellent monograph on febrile disease, has stood deservedly high since its first publication. It will be seen that it has now reached its fourth edition under the supervision of Prof. A. Clark, a gentleman who, from the nature of his studies and pursuits, is well calculated to appreciate and discuss the many intricate and difficult questions in pathology. His annotations add much to the interest of the work, and have brought it well up to the condition of the science as it exists at the present day in regard to this class of diseases.—*Southern Med. and Surg. Journal*, Mar. 1857.

It is a work of great practical value and interest, containing much that is new relative to the several diseases of which it treats, and, with the additions of the editor, is fully up to the times. The distinctive features of the different forms of fever are plainly and forcibly portrayed, and the lines of demarcation carefully and accurately drawn, and to the American practitioner is a more valuable and safe guide than any work on fever extant.—*Ohio Med. and Surg Journal*, May, 1857.

BROWN (ISAAC BAKER),

Surgeon-Accoucheur to St. Mary's Hospital, &c.

ON SOME DISEASES OF WOMEN ADMITTING OF SURGICAL TREATMENT. With handsome illustrations. One vol. 8vo., extra cloth, pp. 276. $1 60.

Mr. Brown has earned for himself a high reputation in the operative treatment of sundry diseases and injuries to which females are peculiarly subject. We can truly say of his work that it is an important addition to obstetrical literature. The operative suggestions and contrivances which Mr. Brown describes, exhibit much practical sagacity and skill, and merit the careful attention of every surgeon-accoucheur.—*Association Journal.*

We have no hesitation in recommending this book to the careful attention of all surgeons who make female complaints a part of their study and practice. —*Dublin Quarterly Journal.*

CARPENTER (WILLIAM B.), M. D., F. R. S., &c.,

Examiner in Physiology and Comparative Anatomy in the University of London.

PRINCIPLES OF HUMAN PHYSIOLOGY; with their chief applications to Psychology, Pathology, Therapeutics, Hygiene, and Forensic Medicine. A new American, from the last and revised London edition. With nearly three hundred illustrations. Edited, with additions, by FRANCIS GURNEY SMITH, M. D., Professor of the Institutes of Medicine in the Pennsylvania Medical College, &c. In one very large and beautiful octavo volume, of about nine hundred large pages, handsomely printed and strongly bound in leather, with raised bands. $4 25.

In the preparation of this new edition, the author has spared no labor to render it, as heretofore, a complete and lucid exposition of the most advanced condition of its important subject. The amount of the additions required to effect this object thoroughly, joined to the former large size of the volume, presenting objections arising from the unwieldy bulk of the work, he has omitted all those portions not bearing directly upon HUMAN PHYSIOLOGY, designing to incorporate them in his forthcoming Treatise on GENERAL PHYSIOLOGY. As a full and accurate text-book on the Physiology of Man, the work in its present condition therefore presents even greater claims upon the student and physician than those which have heretofore won for it the very wide and distinguished favor which it has so long enjoyed. The additions of Prof. Smith will be found to supply whatever may have been wanting to the American student, while the introduction of many new illustrations, and the most careful mechanical execution, render the volume one of the most attractive as yet issued.

For upwards of thirteen years Dr. Carpenter's work has been considered by the profession generally, both in this country and England, as the most valuable compendium on the subject of physiology in our language. This distinction it owes to the high attainments and unwearied industry of its accomplished author. The present edition (which, like the last American one, was prepared by the author himself), is the result of such extensive revision, that it may almost be considered a new work. We need hardly say, in concluding this brief notice, that while the work is indispensable to every student of medicine in this country, it will amply repay the practitioner for its perusal by the interest and value of its contents.—*Boston Med. and Surg. Journal.*

This is a standard work—the text-book used by all medical students who read the English language. It has passed through several editions in order to keep pace with the rapidly growing science of Physiology. Nothing need be said in its praise, for its merits are universally known; we have nothing to say of its defects, for they only appear where the science of which it treats is incomplete.—*Western Lancet.*

The most complete exposition of physiology which any language can at present give.—*Brit. and For. Med.-Chirurg. Review.*

The greatest, the most reliable, and the best book on the subject which we know of in the English language.—*Stethoscope.*

To eulogize this great work would be superfluous We should observe, however, that in this edition the author has remodelled a large portion of the former, and the editor has added much matter of interest, especially in the form of illustrations. We may confidently recommend it as the most complete work on Human Physiology in our language.—*Southern Med. and Surg. Journal*, December, 1855.

The most complete work on the science in our language.—*Am. Med. Journal.*

The most complete work now extant in our language.—*N. O. Med. Register.*

The best text-book in the language on this extensive subject.—*London Med. Times.*

A complete cyclopædia of this branch of science.—*N. Y. Med. Times.*

The profession of this country, and perhaps also of Europe, have anxiously and for some time awaited the announcement of this new edition of Carpenter's Human Physiology. His former editions have for many years been almost the only text-book on Physiology in all our medical schools, and its circulation among the profession has been unsurpassed by any work in any department of medical science.

It is quite unnecessary for us to speak of this work as its merits would justify. The mere announcement of its appearance will afford the highest pleasure to every student of Physiology, while its perusal will be of infinite service in advancing physiological science.—*Ohio Med. and Surg. Journ.*

BY THE SAME AUTHOR. (*Lately Issued.*)

PRINCIPLES OF COMPARATIVE PHYSIOLOGY. New American, from the Fourth and Revised London edition. In one large and handsome octavo volume, with over three hundred beautiful illustrations. pp. 752. Extra cloth, $4 80; leather, raised bands, $5 25.

The delay which has existed in the appearance of this work has been caused by the very thorough revision and remodelling which it has undergone at the hands of the author, and the large number of new illustrations which have been prepared for it. It will, therefore, be found almost a new work, and fully up to the day in every department of the subject, rendering it a reliable text-book for all students engaged in this branch of science. Every effort has been made to render its typographical finish and mechanical execution worthy of its exalted reputation, and creditable to the mechanical arts of this country.

This book should not only be read but thoroughly studied by every member of the profession. None are too wise or old, to be benefited thereby. But especially to the younger class would we cordially commend it as best fitted of any work in the English language to qualify them for the reception and comprehension of those truths which are daily being developed in physiology.—*Medical Counsellor.*

Without pretending to it, it is an encyclopedia of the subject, accurate and complete in all respects—a truthful reflection of the advanced state at which the science has now arrived.—*Dublin Quarterly Journal of Medical Science.*

A truly magnificent work—in itself a perfect physiological study.—*Ranking's Abstract.*

This work stands without its fellow. It is one few men in Europe could have undertaken; it is one no man, we believe, could have brought to so successful an issue as Dr. Carpenter. It required for its production a physiologist at once deeply read in the labors of others, capable of taking a general, critical, and unprejudiced view of those labors, and of combining the varied, heterogeneous materials at his disposal, so as to form an harmonious whole. We feel that this abstract can give the reader a very imperfect idea of the fulness of this work, and no idea of its unity, of the admirable manner in which material has been brought, from the most various sources, to conduce to its completeness, of the lucidity of the reasoning it contains, or of the clearness of language in which the whole is clothed. Not the profession only, but the scientific world at large, must feel deeply indebted to Dr. Carpenter for this great work. It must, indeed, add largely even to his high reputation.—*Medical Times.*

CARPENTER (WILLIAM B.), M. D., F. R. S.,

Examiner in Physiology and Comparative Anatomy in the University of London.

THE MICROSCOPE AND ITS REVELATIONS.

With an Appendix containing the Applications of the Microscope to Clinical Medicine, &c. By F. G. Smith, M. D. Illustrated by four hundred and thirty-four beautiful engravings on wood. In one large and very handsome octavo volume, of 724 pages, extra cloth, $4 00; leather, $4 50.

Dr. Carpenter's position as a microscopist and physiologist, and his great experience as a teacher eminently qualify him to produce what has long been wanted—a good text-book on the practical use of the microscope. In the present volume his object has been, as stated in his Preface, "to combine, within a moderate compass, that information with regard to the use of his 'tools,' which is most essential to the working microscopist, with such an account of the objects best fitted for his study, as might qualify him to comprehend what he observes, and might thus prepare him to benefit science, whilst expanding and refreshing his own mind" That he has succeeded in accomplishing this, no one acquainted with his previous labors can doubt.

The great importance of the microscope as a means of diagnosis, and the number of microscopists who are also physicians, have induced the American publishers, with the author's approval, to add an Appendix, carefully prepared by Professor Smith, on the applications of the instrument to clinical medicine, together with an account of American Microscopes, their modifications and accessories. This portion of the work is illustrated with nearly one hundred wood-cuts, and, it is hoped, will adapt the volume more particularly to the use of the American student.

Every care has been taken in the mechanical execution of the work, which is confidently presented as in no respect inferior to the choicest productions of the London press.

The mode in which the author has executed his intentions may be gathered from the following condensed synopsis of the

CONTENTS.

Introduction—History of the Microscope. Chap. I. Optical Principles of the Microscope. Chap. II. Construction of the Microscope. Chap. III. Accessory Apparatus. Chap. IV. Management of the Microscope Chap. V. Preparation, Mounting, and Collection of Objects. Chap. VI. Microscopic Forms of Vegetable Life—Protophytes. Chap. VII. Higher Cryptogamia. Chap. VIII. Phanerogamic Plants. Chap. IX. Microscopic Forms of Animal Life—Protozoa—Animalcules. Chap. X. Foraminifera, Polycystina, and Sponges. Chap. XI. Zoophytes. Chap. XII. Echinodermata. Chap. XIII. Polyzoa and Compound Tunicata. Chap. XIV. Molluscous Animals Generally. Chap. XV. Annulosa. Chap. XVI. Crustacea. Chap. XVII. Insects and Arachnida. Chap. XVIII. Vertebrated Animals. Chap. XIX. Applications of the Microscope to Geology. Chap. XX. Inorganic or Mineral Kingdom—Polarization. Appendix. Microscope as a means of Diagnosis—Injections—Microscopes of American Manufacture.

Those who are acquainted with Dr. Carpenter's previous writings on Animal and Vegetable Physiology, will fully understand how vast a store of knowledge he is able to bring to bear upon so comprehensive a subject as the revelations of the microscope; and even those who have no previous acquaintance with the construction or uses of this instrument, will find abundance of information conveyed in clear and simple language.—*Med. Times and Gazette.*

Although originally not intended as a strictly medical work, the additions by Prof. Smith give it a positive claim upon the profession, for which we doubt not he will receive their sincere thanks. Indeed, we know not where the student of medicine will find such a complete and satisfactory collection of microscopic facts bearing upon physiology and practical medicine as is contained in Prof. Smith's appendix; and this of itself, it seems to us, is fully worth the cost of the volume.—*Louisville Medical Review*, Nov. 1856.

BY THE SAME AUTHOR.

ELEMENTS (OR MANUAL) OF PHYSIOLOGY, INCLUDING PHYSIOLOGICAL ANATOMY.

Second American, from a new and revised London edition. With one hundred and ninety illustrations. In one very handsome octavo volume, leather. pp. 566. $3 00.

In publishing the first edition of this work, its title was altered from that of the London volume, by the substitution of the word "Elements" for that of "Manual," and with the author's sanction the title of "Elements" is still retained as being more expressive of the scope of the treatise.

To say that it is the best manual of Physiology now before the public, would not do sufficient justice to the author.—*Buffalo Medical Journal.*

In his former works it would seem that he had exhausted the subject of Physiology. In the present, he gives the essence, as it were, of the whole.—*N. Y. Journal of Medicine.*

Those who have occasion for an elementary treatise on Physiology, cannot do better than to possess themselves of the manual of Dr. Carpenter.—*Medical Examiner.*

The best and most complete exposé of modern Physiology, in one volume, extant in the English language.—*St. Louis Medical Journal.*

BY THE SAME AUTHOR. (*Preparing.*)

PRINCIPLES OF GENERAL PHYSIOLOGY, INCLUDING ORGANIC CHEMISTRY AND HISTOLOGY.

With a General Sketch of the Vegetable and Animal Kingdom. In one large and very handsome octavo volume, with several hundred illustrations.

The subject of general physiology having been omitted in the last editions of the author's "Comparative Physiology" and "Human Physiology," he has undertaken to prepare a volume which shall present it more thoroughly and fully than has yet been attempted, and which may be regarded as an introduction to his other works.

BY THE SAME AUTHOR.

A PRIZE ESSAY ON THE USE OF ALCOHOLIC LIQUORS IN HEALTH AND DISEASE.

New edition, with a Preface by D. F. Condie, M. D., and explanations of scientific words. In one neat 12[illegible]

CONDIE (D. F.), M. D., &c.

A PRACTICAL TREATISE ON THE DISEASES OF CHILDREN. Fifth edition, revised and augmented. In one large volume, 8vo., leather, of over 750 pages. $3 25. (*Now Ready*, December, 1858.)

In presenting a new and revised edition of this favorite work, the publishers have only to state that the author has endeavored to render it in every respect "a complete and faithful exposition of the pathology and therapeutics of the maladies incident to the earlier stages of existence—a full and exact account of the diseases of infancy and childhood." To accomplish this he has subjected the whole work to a careful and thorough revision, rewriting a considerable portion, and adding several new chapters. In this manner it is hoped that any deficiencies which may have previously existed have been supplied, that the recent labors of practitioners and observers have been thoroughly incorporated, and that in every point the work will be found to maintain the high reputation it has enjoyed as a complete and thoroughly practical book of reference in infantile affections.

A few notices of previous editions are subjoined.

Dr. Condie's scholarship, acumen, industry, and practical sense are manifested in this, as in all his numerous contributions to science.—*Dr. Holmes's Report to the American Medical Association.*

Taken as a whole, in our judgment, Dr. Condie's Treatise is the one from the perusal of which the practitioner in this country will rise with the greatest satisfaction.—*Western Journal of Medicine and Surgery.*

One of the best works upon the Diseases of Children in the English language.—*Western Lancet.*

We feel assured from actual experience that no physician's library can be complete without a copy of this work.—*N. Y. Journal of Medicine.*

A veritable pædiatric encyclopædia, and an honor to American medical literature.—*Ohio Medical and Surgical Journal.*

We feel persuaded that the American medical profession will soon regard it not only as a very good, but as the VERY BEST "Practical Treatise on the Diseases of Children."—*American Medical Journal.*

In the department of infantile therapeutics, the work of Dr. Condie is considered one of the best which has been published in the English language.—*The Stethoscope.*

We pronounced the first edition to be the best work on the diseases of children in the English language, and, notwithstanding all that has been published, we still regard it in that light.—*Medical Examiner.*

The value of works by native authors on the diseases which the physician is called upon to combat, will be appreciated by all; and the work of Dr. Condie has gained for itself the character of a safe guide for students, and a useful work for consultation by those engaged in practice.—*N. Y. Med. Times.*

This is the fourth edition of this deservedly popular treatise. During the interval since the last edition, it has been subjected to a thorough revision by the author; and all new observations in the pathology and therapeutics of children have been included in the present volume. As we said before, we do not know of a better book on diseases of children, and to a large part of its recommendations we yield an unhesitating concurrence.—*Buffalo Med. Journal.*

Perhaps the most full and complete work now before the profession of the United States; indeed, we may say in the English language. It is vastly superior to most of its predecessors.—*Transylvania Med. Journal.*

CHRISTISON (ROBERT), M. D., V. P. R. S. E., &c.

A DISPENSATORY; or, Commentary on the Pharmacopœias of Great Britain and the United States; comprising the Natural History, Description, Chemistry, Pharmacy, Actions, Uses, and Doses of the Articles of the Materia Medica. Second edition, revised and improved, with a Supplement containing the most important New Remedies. With copious Additions, and two hundred and thirteen large wood-engravings. By R. EGLESFELD GRIFFITH, M. D. In one very large and handsome octavo volume, leather, raised bands, of over 1000 pages. $3 50.

COOPER (BRANSBY B.), F. R. S.

LECTURES ON THE PRINCIPLES AND PRACTICE OF SURGERY. In one very large octavo volume, extra cloth, of 750 pages. $3 00.

COOPER ON DISLOCATIONS AND FRACTURES OF THE JOINTS.—Edited by BRANSBY B. COOPER, F. R. S., &c. With additional Observations by Prof. J. C. WARREN. A new American edition. In one handsome octavo volume, extra cloth, of about 500 pages, with numerous illustrations on wood. $3 25.

COOPER ON THE ANATOMY AND DISEASES OF THE BREAST, with twenty-five Miscellaneous and Surgical Papers. One large volume, imperial 8vo., extra cloth, with 252 figures, on 36 plates. $2 50.

COOPER ON THE STRUCTURE AND DISEASES OF THE TESTIS, AND ON THE THYMUS GLAND. One vol. imperial 8vo., extra cloth, with 177 figures on 29 plates. $2 00.

COPLAND ON THE CAUSES, NATURE, AND TREATMENT OF PALSY AND APOPLEXY. In one volume, royal 12mo., extra cloth. pp. 336. 80 cents.

CLYMER ON FEVERS; THEIR DIAGNOSIS, PATHOLOGY, AND TREATMENT. In one octavo volume, leather, of 600 pages. $1 50.

COLOMBAT DE L'ISERE ON THE DISEASES OF FEMALES, and on the special Hygiene of their Sex. Translated, with many Notes and Additions, by C. D. MEIGS, M. D. Second edition, revised and improved. In one large volume, octavo, leather, with numerous wood-cuts. pp. 720. $3 50.

CARSON (JOSEPH), M. D.,

Professor of Materia Medica and Pharmacy in the University of Pennsylvania.

SYNOPSIS OF THE COURSE OF LECTURES ON MATERIA MEDICA AND PHARMACY, delivered in the University of Pennsylvania. Second and revised edition. In one very neat octavo volume, extra cloth, of 208 pages. $1 50.

CURLING (T. B.), F. R. S.,

Surgeon to the London Hospital, President of the Hunterian Society, &c.

A PRACTICAL TREATISE ON DISEASES OF THE TESTIS, SPERMA-

CHURCHILL (FLEETWOOD), M. D., M. R. I. A.

ON THE THEORY AND PRACTICE OF MIDWIFERY. Edited, with Notes and Additions, by D. Francis Condie, M. D., author of a "Practical Treatise on the Diseases of Children," &c. With 139 illustrations. In one very handsome octavo volume, leather. pp. 510. $3 00.

To bestow praise on a book that has received such marked approbation would be superfluous. We need only say, therefore, that if the first edition was thought worthy of a favorable reception by the medical public, we can confidently affirm that this will be found much more so. The lecturer, the practitioner, and the student, may all have recourse to its pages, and derive from their perusal much interest and instruction in everything relating to theoretical and practical midwifery.—*Dublin Quarterly Journal of Medical Science.*

A work of very great merit, and such as we can confidently recommend to the study of every obstetric practitioner.—*London Medical Gazette.*

This is certainly the most perfect system extant. It is the best adapted for the purposes of a text-book, and that which he whose necessities confine him to one book, should select in preference to all others.—*Southern Medical and Surgical Journal.*

The most popular work on midwifery ever issued from the American press.—*Charleston Med. Journal.*

Were we reduced to the necessity of having but *one* work on midwifery, and *permitted to choose*, we would unhesitatingly take Churchill.—*Western Med. and Surg. Journal.*

It is impossible to conceive a more useful and elegant manual than Dr. Churchill's Practice of Midwifery.—*Provincial Medical Journal.*

Certainly, in our opinion, the very best work on the subject which exists.—*N. Y. Annalist.*

No work holds a higher position, or is more deserving of being placed in the hands of the tyro, the advanced student, or the practitioner.—*Medical Examiner.*

Previous editions, under the editorial supervision of Prof R. M. Huston, have been received with marked favor, and they deserved it; but this, reprinted from a very late Dublin edition, carefully revised and brought up by the author to the present time, does present an unusually accurate and able exposition of every important particular embraced in the department of midwifery. * * The clearness, directness, and precision of its teachings, together with the great amount of statistical research which its text exhibits, have served to place it already in the foremost rank of works in this department of remedial science.—*N. O. Med. and Surg. Journal.*

In our opinion, it forms one of the best if not the very best text-book and epitome of obstetric science which we at present possess in the English language.—*Monthly Journal of Medical Science.*

The clearness and precision of style in which it is written, and the great amount of statistical research which it contains, have served to place it in the first rank of works in this department of medical science. —*N. Y. Journal of Medicine.*

Few treatises will be found better adapted as a text-book for the student, or as a manual for the frequent consultation of the young practitioner.—*American Medical Journal.*

BY THE SAME AUTHOR. (*Just Issued.*)

ON THE DISEASES OF INFANTS AND CHILDREN. Second American Edition, revised and enlarged by the author. Edited, with Notes, by W. V. Keating, M. D. In one large and handsome volume, extra cloth, of over 700 pages. $3 00, or in leather, $3 25.

In preparing this work a second time for the American profession, the author has spared no labor in giving it a very thorough revision, introducing several new chapters, and rewriting others, while every portion of the volume has been subjected to a severe scrutiny. The efforts of the American editor have been directed to supplying such information relative to matters peculiar to this country as might have escaped the attention of the author, and the whole may, therefore, be safely pronounced one of the most complete works on the subject accessible to the American Profession. By an alteration in the size of the page, these very extensive additions have been accommodated without unduly increasing the size of the work.

This work contains a vast amount of interesting matter, which is so well arranged and so curtly worded that the book may be regarded as an encyclopædia of information upon the subject of which it treats. It is certainly also a monument of Dr. Churchill's untiring industry, inasmuch as there is not a single work upon the diseases of children with which we are acquainted that is not fully referred to and quoted from in its pages, and scarcely a contribution of the least importance to any British or Foreign Medical Journal, for some years past, which is not duly noticed.—*London Lancet*, Feb. 20, 1858.

Availing himself of every fresh source of information, Dr. Churchill endeavored, with his accustomed industry and perseverance, to bring his work up to the present state of medical knowledge in all the subjects of which it treats; and in this endeavor he has, we feel bound to say, been eminently successful. Besides the addition of more than one hundred and thirty pages of matter, we observe that some entirely new and important chapters are introduced, viz: on paralysis, syphilis, phthisis, scleremа, &c. &c. As the work now stands, it is, we believe, the most comprehensive in the English language upon the diseases incident to early life.—*Dublin Quarterly Journal*, Feb. 1858.

It brings before the reader an amount of information not comprised in any similar production in the language. The amount of labor consumed upon its production can only be conceived by those who have been similarly occupied, every work of note published within the last twenty-five years in the different languages of Europe having been laid under contribution for the illustration of its topics. The material thus derived has been used with consummate skill, and the result has been a work creditable alike to the author and his country.—*N. A. Medico-Chir. Review*, May, 1858.

After this meagre, and we know, very imperfect notice of Dr. Churchill's work, we shall conclude by saying, that it is one that cannot fail from its copiousness, extensive research, and general accuracy, to exalt still higher the reputation of the author in this country. The American reader will be particularly pleased to find that Dr. Churchill has done full justice throughout his work to the various American authors on this subject. The names of Dewees, Eberle, Condie, and Stewart, occur on nearly every page, and these authors are constantly referred to by the author in terms of the highest praise, and with the most liberal courtesy.—*The Medical Examiner.*

We recommend the work of Dr. Churchill most cordially, both to students and practitioners, as a valuable and reliable guide in the treatment of the diseases of children.—*Am. Journ. of the Med. Sciences.*

We know of no work on this department of Practical Medicine which presents so candid and unprejudiced a statement or posting up of our actual knowledge as this.—*N. Y. Journal of Medicine.*

Its claims to merit both as a scientific and practical work, are of the highest order. Whilst we would not elevate it above every other treatise on the same subject, we certainly believe that very few are equal to it, and none superior.—*Southern Med. and Surgical Journal.*

BY THE SAME AUTHOR.

ESSAYS ON THE PUERPERAL FEVER, AND OTHER DISEASES PECULIAR TO WOMEN. Selected from the writings of British Authors previous to the close of the Eighteenth Century. In one neat octavo volume, extra cloth, of about 450 pages. $2 50.

CHURCHILL (FLEETWOOD), M. D., M. R. I. A., &c.

ON THE DISEASES OF WOMEN; including those of Pregnancy and Childbed.

A new American edition, revised by the Author. With Notes and Additions, by D. FRANCIS CONDIE, M. D., author of "A Practical Treatise on the Diseases of Children." With numerous illustrations. In one large and handsome octavo volume, leather, of 768 pages. (*Just Issued*, 1857.) $3 00.

This edition of Dr. Churchill's very popular treatise may almost be termed a new work, so thoroughly has he revised it in every portion. It will be found greatly enlarged, and thoroughly brought up to the most recent condition of the subject, while the very handsome series of illustrations introduced, representing such pathological conditions as can be accurately portrayed, present a novel feature, and afford valuable assistance to the young practitioner. Such additions as appeared desirable for the American student have been made by the editor, Dr. Condie, while a marked improvement in the mechanical execution keeps pace with the advance in all other respects which the volume has undergone, while the price has been kept at the former very moderate rate.

It comprises, unquestionably, one of the most exact and comprehensive expositions of the present state of medical knowledge in respect to the diseases of women that has yet been published.—*Am. Journ. Med. Sciences*, July, 1857.

We hail with much pleasure the volume before us, thoroughly revised, corrected, and brought up to the latest date, by Dr. Churchill himself, and rendered still more valuable by notes, from the experienced and able pen of Dr. D. F. Condie, of Philadelphia.—*Southern Med. and Surg. Journal*, Oct. 1857.

This work is the most reliable which we possess on this subject; and is deservedly popular with the profession.—*Charleston Med. Journal*, July, 1857.

Dr. Churchill's treatise on the *Diseases of Women* is, perhaps, the most popular of his works with the profession in this country. It has been very generally received both as a text-book and manual of practice. The present edition has undergone the most elaborate revision, and additions of an important character have been made, to render it a complete exponent of the present state of our knowledge of these diseases.—*N. Y. Journ. of Med.*, Sept. 1857.

We now regretfully take leave of Dr. Churchill's book. Had our typographical limits permitted, we should gladly have borrowed more from its richly stored pages. In conclusion, we heartily recommend it to the profession, and would at the same time express our firm conviction that it will not only add to the reputation of its author, but will prove a work of great and extensive utility to obstetric practitioners.—*Dublin Medical Press.*

We know of no author who deserves that approbation, on "the diseases of females," to the same extent that Dr. Churchill does. His, indeed, is the only thorough treatise we know of on the subject; and it may be commended to practitioners and students as a masterpiece in its particular department. The former editions of this work have been commended strongly in this journal, and they have won their way to an extended, and a well-deserved popularity. This fifth edition, before us, is well calculated to maintain Dr. Churchill's high reputation. It was revised and enlarged by the author, for his American publishers, and it seems to us that there is scarcely any species of desirable information on its subjects that may not be found in this work.—*The Western Journal of Medicine and Surgery.*

We are gratified to announce a new and revised edition of Dr. Churchill's valuable work on the diseases of females We have ever regarded it as one of the very best works on the subjects embraced within its scope, in the English language; and the present edition, enlarged and revised by the author, renders it still more entitled to the confidence of the profession. The valuable notes of Prof. Huston have been retained, and contribute, in no small degree, to enhance the value of the work. It is a source of congratulation that the publishers have permitted the author to be, in this instance, his own editor, thus securing all the revision which an author alone is capable of making.—*The Western Lancet.*

As a comprehensive manual for students, or a work of reference for practitioners, we only speak with common justice when we say that it surpasses any other that has ever issued on the same subject from the British press.—*The Dublin Quarterly Journal.*

DICKSON (S. H.), M. D.,

Professor of Practice of Medicine in the Jefferson Medical College, Philadelphia.

ELEMENTS OF MEDICINE; a Compendious View of Pathology and Therapeutics, or the History and Treatment of Diseases.

In one large and handsome octavo volume, of 750 pages, leather. $3 75.

As an American text-book on the Practice of Medicine for the student, and as a condensed work of reference for the practitioner, this volume will have strong claims on the attention of the profession. Few physicians have had wider opportunities than the author for observation and experience, and few perhaps have used them better. As the result of a life of study and practice, therefore, the present volume will doubtless be received with the welcome it deserves.

This book is eminently what it professes to be; a distinguished merit in these days. Designed for "Teachers and Students of Medicine," and admirably suited to their wants, we think it will be received, on its own merits, with a hearty welcome.—*Boston Med. and Surg. Journal.*

Indited by one of the most accomplished writers of our country, as well as by one who has long held a high position among teachers and practitioners of medicine, this work is entitled to patronage and careful study. The learned author has endeavored to condense in this volume most of the practical matter contained in his former productions, so as to adapt it to the use of those who have not time to devote to more extensive works.—*Southern Med. and Surg. Journal.*

Prof. Dickson's work supplies, to a great extent, a desideratum long felt in American medicine.—*N. O. Med. and Surg. Journal.*

Estimating this work according to the purpose for which it is designed, we must think highly of its merits, and we have no hesitation in predicting for it a favorable reception by both students and teachers.

Not professing to be a complete and comprehensive treatise, it will not be found full in detail, nor filled with discussions of theories and opinions, but embracing all that is essential in theory and practice, it is admirably adapted to the wants of the American student. Avoiding all that is uncertain, it presents more clearly to the mind of the reader that which is established and verified by experience. The varied and extensive reading of the author is conspicuously apparent, and all the recent improvements and discoveries in therapeutics and pathology are chronicled in its pages.—*Charleston Med. Journal.*

In the first part of the work the subject of general pathology is presented in outline, giving a beautiful picture of its distinguishing features, and throughout the succeeding chapters we find that he has kept scrupulously within the bounds of sound reasoning and legitimate deduction. Upon the whole, we do not hesitate to pronounce it a superior work in its class, and that Dr. Dickson merits a place in the first rank of American writers.—*Western Lancet.*

DRUITT (ROBERT), M. R. C. S., &c.

THE PRINCIPLES AND PRACTICE OF MODERN SURGERY. Edited

by F. W. SARGENT, M. D., author of "Minor Surgery," &c. Illustrated with one hundred and ninety-three wood-engravings. In one very handsomely printed octavo volume, leather, of 576 large pages. $3 00.

Dr. Druitt's researches into the literature of his subject have been not only extensive, but well directed; the most discordant authors are fairly and impartially quoted, and, while due credit is given to each, their respective merits are weighed with an unprejudiced hand. The grain of wheat is preserved, and the chaff is unmercifully stripped off. The arrangement is simple and philosophical, and the style, though clear and interesting, is so precise, that the book contains more information condensed into a few words than any other surgical work with which we are acquainted.—*London Medical Times and Gazette.*

Druitt's Surgery is too well known to the American medical profession to require its announcement anywhere. Probably no work of the kind has ever been more cordially received and extensively circulated than this. The fact that it comprehends in a comparatively small compass, all the essential elements of theoretical and practical Surgery—that it is found to contain reliable and authentic information on the nature and treatment of nearly all surgical affections—is a sufficient reason for the liberal patronage it has obtained. The editor, Dr. F. W. Sargent, has contributed much to enhance the value of the work, by such American improvements as are calculated more perfectly to adapt it to our own views and practice in this country. It abounds everywhere with spirited and life-like illustrations, which to the young surgeon, especially, are of no minor consideration. Every medical man frequently needs just such a work as this, for immediate reference in moments of sudden emergency, when he has not time to consult more elaborate treatises.—*The Ohio Medical and Surgical Journal.*

No work, in our opinion, equals it in presenting so much valuable surgical matter in so small a compass.—*St. Louis Med. and Surgical Journal.*

DALTON, JR. (J. C.), M. D.

Professor of Physiology in the College of Physicians, New York.

A TREATISE ON HUMAN PHYSIOLOGY, designed for the use of Students

and Practitioners of Medicine. With two hundred and fifty-four illustrations on wood. In one very beautiful octavo volume, of over 600 pages, extra cloth, $4 00; leather, raised bands, $4 25. (*Now ready*, Jan. 1859.)

The object of the author has been to present a condensed view of the present condition of his subject, divested of mere theoretical views and hypothetical reasonings, but comprehending all important details which may be received as definitely settled. His long experience as an investigator and as a teacher has given him peculiar advantages in this, and he has endeavored wherever practicable to show the means by which results have been reached, so as to afford the student the means of pursuing original research, as well as a complete text-book of the science in its most advanced condition. Of the numerous illustrations, all are original with the exception of eleven, so that the whole possesses a completeness and authority not otherwise attainable, and in the mechanical execution every care has been taken to present one of the handsomest volumes as yet produced by the American press.

To our mind, fulfils in a most admirable manner the objects contemplated by the author. The broad field of physiology has been traversed with discrimination, and its most valuable acquisitions compressed into a reasonable compass, embracing likewise the results of recent laborers in this department of our science.—*Med. and Surg. Reporter*, Jan. 29, 1859.

DUNGLISON, FORBES, TWEEDIE, AND CONOLLY.

THE CYCLOPÆDIA OF PRACTICAL MEDICINE: comprising Treatises on

the Nature and Treatment of Diseases, Materia Medica, and Therapeutics, Diseases of Women and Children, Medical Jurisprudence, &c. &c. In four large super-royal octavo volumes, of 3254 double-columned pages, strongly and handsomely bound, with raised bands. $12 00.

*** This work contains no less than four hundred and eighteen distinct treatises, contributed by sixty-eight distinguished physicians, rendering it a complete library of reference for the country practitioner.

The most complete work on Practical Medicine extant; or, at least, in our language.—*Buffalo Medical and Surgical Journal.*

For reference, it is above all price to every practitioner.—*Western Lancet.*

One of the most valuable medical publications of the day—as a work of reference it is invaluable.—*Western Journal of Medicine and Surgery.*

It has been to us, both as learner and teacher, a work for ready and frequent reference, one in which modern English medicine is exhibited in the most advantageous light.—*Medical Examiner.*

We rejoice that this work is to be placed within the reach of the profession in this country, it being unquestionably one of very great value to the practitioner. This estimate of it has not been formed from a hasty examination, but after an intimate acquaintance derived from frequent consultation of it during the past nine or ten years. The editors are practitioners of established reputation, and the list of contributors embraces many of the most eminent professors and teachers of London, Edinburgh, Dublin, and Glasgow. It is, indeed, the great merit of this work that the principal articles have been furnished by practitioners who have not only devoted especial attention to the diseases about which they have written, but have also enjoyed opportunities for an extensive practical acquaintance with them, and whose reputation carries the assurance of their competency justly to appreciate the opinions of others, while it stamps their own doctrines with high and just authority.—*American Medical Journ.*

DEWEES'S COMPREHENSIVE SYSTEM OF MIDWIFERY. Illustrated by occasional cases and many engravings. Twelfth edition, with the author's last improvements and corrections. In one octavo volume, extra cloth, of 600 pages. $3 20.

DEWEES'S TREATISE ON THE PHYSICAL AND MEDICAL TREATMENT OF CHILDREN. The last edition. In one volume, octavo, extra cloth, 548 pages. $2 80.

DEWEES'S TREATISE ON THE DISEASES OF FEMALES. Tenth edition. In one volume, octavo, extra cloth, 532 pages, with plates. $3 00.

DANA ON ZOOPHYTES AND CORALS. In one volume, imperial quarto, extra cloth, with wood-cuts. $15 00. Also, AN ATLAS, in one volume, imperial folio, with sixty-one magnificent colored plates. Bound in half morocco. $30 00.

DE LA BECHE'S GEOLOGICAL OBSERVER. In one very large and handsome octavo volume, extra cloth, of 700 pages, with 300 wood-cuts. $4 00.

FRICK ON RENAL AFFECTIONS; their Diagnosis and Pathology. With illustrations. One volume, royal 12mo., extra cloth. 75 cents.

DUNGLISON (ROBLEY), M. D.,

Professor of Institutes of Medicine in the Jefferson Medical College, Philadelphia.

NEW AND ENLARGED EDITION, Now Ready, 1858.

MEDICAL LEXICON; a Dictionary of Medical Science, containing a concise Explanation of the various Subjects and Terms of Anatomy, Physiology, Pathology, Hygiene, Therapeutics, Pharmacology, Pharmacy, Surgery, Obstetrics, Medical Jurisprudence, Dentistry, &c. Notices of Climate and of Mineral Waters; Formulæ for Officinal, Empirical, and Dietetic Preparations, &c. With French and other Synonymes. FIFTEENTH EDITION, revised and very greatly enlarged. In one very large and handsome octavo volume, of 992 double-columned pages, in small type; strongly bound in leather, with raised bands. Price $4 00.

Especial care has been devoted in the preparation of this edition to render it in every respect worthy a continuance of the very remarkable favor which it has hitherto enjoyed. The rapid sale of FIFTEEN large editions, and the constantly increasing demand, show that it is regarded by the profession as the standard authority. Stimulated by this fact, the author has endeavored in the present revision to introduce whatever might be necessary "to make it a satisfactory and desirable—if not indispensable—lexicon, in which the student may search without disappointment for every term that has been legitimated in the nomenclature of the science." To accomplish this, large additions have been found requisite, and the extent of the author's labors may be estimated from the fact that about SIX THOUSAND subjects and terms have been introduced throughout, rendering the whole number of definitions about SIXTY THOUSAND, to accommodate which, the number of pages has been increased by nearly a hundred, notwithstanding an enlargement in the size of the page. The medical press, both in this country and in England, has pronounced the work indispensable to all medical students and practitioners, and the present improved edition will not lose that enviable reputation.

The publishers have endeavored to render the mechanical execution worthy of a volume of such universal use in daily reference. The greatest care has been exercised to obtain the typographical accuracy so necessary in a work of the kind. By the small but exceedingly clear type employed, an immense amount of matter is condensed in its thousand ample pages, while the binding will be found strong and durable. With all these improvements and enlargements, the price has been kept at the former very moderate rate, placing it within the reach of all.

This work, the appearance of the fifteenth edition of which, it has become our duty and pleasure to announce, is perhaps the most stupendous monument of labor and erudition in medical literature. One would hardly suppose after constant use of the preceding editions, where we have never failed to find a sufficiently full explanation of every medical term, that in this edition "*about six thousand subjects and terms have been added,*" with a careful revision and correction of the entire work. It is only necessary to announce the advent of this edition to make it occupy the place of the preceding one on the table of every medical man, as it is without doubt the best and most comprehensive work of the kind which has ever appeared.—*Buffalo Med. Journ.*, Jan. 1858.

The work is a monument of patient research, skilful judgment, and vast physical labor, that will perpetuate the name of the author more effectually than any possible device of stone or metal. Dr. Dunglison deserves the thanks not only of the American profession, but of the whole medical world.—*North Am. Medico-Chir. Review*, Jan. 1858.

A Medical Dictionary better adapted for the wants of the profession than any other with which we are acquainted, and of a character which places it far above comparison and competition.—*Am. Journ. Med. Sciences*, Jan. 1858.

We need only say, that the addition of 6,000 new terms, with their accompanying definitions, may be said to constitute a new work, by itself. We have examined the Dictionary attentively, and are most happy to pronounce it unrivalled of its kind. The erudition displayed, and the extraordinary industry which must have been demanded, in its preparation and perfection, redound to the lasting credit of its author, and have furnished us with a volume *indispensable* at the present day, to all who would find themselves *au niveau* with the highest standards of medical information.—*Boston Medical and Surgical Journal*, Dec. 31, 1857.

Good lexicons and encyclopedic works generally, are the most labor-saving contrivances which literary men enjoy; and the labor which is required to produce them in the perfect manner of this example is something appalling to contemplate. The author tells us in his preface that he has added about six thousand terms and subjects to this edition, which, before, was considered universally as the best work of the kind in any language.—*Silliman's Journal*, March, 1858.

He has razed his gigantic structure to the foundations, and remodelled and reconstructed the entire pile. No less than *six thousand* additional subjects and terms are illustrated and analyzed in this new edition, swelling the grand aggregate to beyond sixty thousand! Thus is placed before the profession a complete and thorough exponent of medical terminology, without rival or possibility of rivalry.—*Nashville Journ. of Med. and Surg.*, Jan. 1858.

It is universally acknowledged, we believe, that this work is incomparably the best and most complete Medical Lexicon in the English language. The amount of labor which the distinguished author has bestowed upon it is truly wonderful, and the learning and research displayed in its preparation are equally remarkable. Comment and commendation are unnecessary, as no one at the present day thinks of purchasing any other Medical Dictionary than this.—*St. Louis Med. and Surg. Journ.*, Jan. 1858.

It is the foundation stone of a good medical library, and should always be included in the first list of books purchased by the medical student.—*Am. Med. Monthly*, Jan. 1858.

A very perfect work of the kind, undoubtedly the most perfect in the English language.—*Med. and Surg. Reporter*, Jan. 1858.

It is now emphatically *the* Medical Dictionary of the English language, and for it there is no substitute.—*N. H. Med. Journ.*, Jan. 1858.

It is scarcely necessary to remark that any medical library wanting a copy of Dunglison's Lexicon must be imperfect.—*Cin. Lancet*, Jan. 1858.

We have ever considered it the best authority published, and the present edition we may safely say has no equal in the world.—*Peninsular Med. Journal*, Jan. 1858.

The most complete authority on the subject to be found in any language.—*Va. Med. Journal*, Feb. '58.

BY THE SAME AUTHOR.

THE PRACTICE OF MEDICINE. A Treatise on Special Pathology and Therapeutics. Third Edition. In two large octavo volumes, leather, of 1,500 pages. $6 25.

DUNGLISON (ROBLEY), M. D.,

Professor of Institutes of Medicine in the Jefferson Medical College, Philadelphia.

HUMAN PHYSIOLOGY. Eighth edition. Thoroughly revised and extensively modified and enlarged, with five hundred and thirty-two illustrations. In two large and handsomely printed octavo volumes, leather, of about 1500 pages. $7 00.

In revising this work for its eighth appearance, the author has spared no labor to render it worthy a continuance of the very great favor which has been extended to it by the profession. The whole contents have been rearranged, and to a great extent remodelled; the investigations which of late years have been so numerous and so important, have been carefully examined and incorporated, and the work in every respect has been brought up to a level with the present state of the subject. The object of the author has been to render it a concise but comprehensive treatise, containing the whole body of physiological science, to which the student and man of science can at all times refer with the certainty of finding whatever they are in search of, fully presented in all its aspects; and on no former edition has the author bestowed more labor to secure this result.

We believe that it can truly be said, no more complete repertory of facts upon the subject treated, can anywhere be found. The author has, moreover, that enviable tact at description and that facility and ease of expression which render him peculiarly acceptable to the casual, or the studious reader. This faculty, so requisite in setting forth many graver and less attractive subjects, lends additional charms to one always fascinating.—*Boston Med. and Surg. Journal*, Sept. 1856.

The most complete and satisfactory system of Physiology in the English language.—*Amer. Med. Journal.*

The best work of the kind in the English language.—*Silliman's Journal.*

The present edition the author has made a perfect mirror of the science as it is at the present hour. As a work upon physiology proper, the science of the functions performed by the body, the student will find it all he wishes.—*Nashville Journ. of Med.* Sept. 1856.

That he has succeeded, most admirably succeeded in his purpose, is apparent from the appearance of an eighth edition. It is now the great encyclopædia on the subject, and worthy of a place in every physician's library.—*Western Lancet*, Sept. 1856.

BY THE SAME AUTHOR. (*Now Ready.*)

GENERAL THERAPEUTICS AND MATERIA MEDICA; adapted for a Medical Text-book. With Indexes of Remedies and of Diseases and their Remedies. SIXTH EDITION, revised and improved. With one hundred and ninety-three illustrations. In two large and handsomely printed octavo vols., leather, of about 1100 pages. $6 00.

From the Author's Preface.

"Another edition of this work being called for, the author has subjected it to a thorough and careful revision. It has been gratifying to him that it has been found so extensively useful by those for whom it was especially intended, as to require that a *sixth* edition should be issued in so short a time after the publication of a fifth. Grateful for the favorable reception of the work by the profession, he has bestowed on the preparation of the present edition all those cares which were demanded by the former editions, and has spared no pains to render it a faithful epitome of General Therapeutics and Materia Medica. The copious Indexes of Remedies and of Diseases and their Remedies cannot fail, the author conceives, to add materially to the value of the work."

This work is too widely and too favorably known to require more than the assurance that the author has revised it with his customary industry, introducing whatever has been found necessary to bring it on a level with the most advanced condition of the subject. The number of illustrations has been somewhat enlarged, and the mechanical execution of the volumes will be found to have undergone a decided improvement.

In announcing a new edition of Dr. Dunglison's General Therapeutics and Materia Medica, we have no words of commendation to bestow upon a work whose merits have been heretofore so often and so justly extolled. It must not be supposed, however, that the present is a mere reprint of the previous edition; the character of the author for laborious research, judicious analysis, and clearness of expression, is fully sustained by the numerous additions he has made to the work, and the careful revision to which he has subjected the whole.—*N. A. Medico-Chir. Review*, Jan. 1858.

The work will, we have little doubt, be bought and read by the majority of medical students; its size, arrangement, and reliability recommend it to all; no one, we venture to predict, will study it without profit, and there are few to whom it will not be in some measure useful as a work of reference. The young practitioner, more especially, will find the copious indexes appended to this edition of great assistance in the selection and preparation of suitable formulæ.—*Charleston Med. Journ. and Review*, Jan. 1858.

BY THE SAME AUTHOR. (*A new Edition.*)

NEW REMEDIES, WITH FORMULÆ FOR THEIR PREPARATION AND ADMINISTRATION. Seventh edition, with extensive Additions. In one very large octavo volume, leather, of 770 pages. $3 75.

Another edition of the "New Remedies" having been called for, the author has endeavored to add everything of moment that has appeared since the publication of the last edition.

The articles treated of in the former editions will be found to have undergone considerable expansion in this, in order that the author might be enabled to introduce, as far as practicable, the results of the subsequent experience of others, as well as of his own observation and reflection; and to make the work still more deserving of the extended circulation with which the preceding editions have been favored by the profession. By an enlargement of the page, the numerous additions have been incorporated without greatly increasing the bulk of the volume.—*Preface.*

One of the most useful of the author's works.—*Southern Medical and Surgical Journal.*

This elaborate and useful volume should be found in every medical library, for as a book of reference, for physicians, it is unsurpassed by any other work in existence, and the double index for diseases and for remedies, will be found greatly to enhance its value.—*New York Med. Gazette.*

The great learning of the author, and his remarkable industry in pushing his researches into every source whence information is derivable, have enabled him to throw together an extensive mass of facts and statements, accompanied by full reference to authorities; which last feature renders the work practically valuable to investigators who desire to examine the original papers.—*The American Journal of Pharmacy.*

ERICHSEN (JOHN),
Professor of Surgery in University College, London, &c.

THE SCIENCE AND ART OF SURGERY; BEING A TREATISE ON SURGICAL INJURIES, DISEASES, AND OPERATIONS. New and improved American, from the second enlarged and carefully revised London edition. Illustrated with over four hundred engravings on wood. In one large and handsome octavo volume, of one thousand closely printed pages, leather, raised bands. $4 50. (*Now Ready*, January, 1859.)

The very distinguished favor with which this work has been received on both sides of the Atlantic has stimulated the author to render it even more worthy of the position which it has so rapidly attained as a standard authority. Every portion has been carefully revised, numerous additions have been made, and the most watchful care has been exercised to render it a complete exponent of the most advanced condition of surgical science. In this manner the work has been enlarged by about a hundred pages, while the series of engravings has been increased by more than a hundred, rendering it one of the most thoroughly illustrated volumes before the profession. The additions of the author having rendered unnecessary most of the notes of the former American editor, but little has been added in this country; some few notes and occasional illustrations have, however, been introduced to elucidate American modes of practice.

It is, in our humble judgment, decidedly the best book of the kind in the English language. Strange that just such books are not oftener produced by public teachers of surgery in this country and Great Britain. Indeed, it is a matter of great astonishment, but no less true than astonishing, that of the many works on surgery republished in this country within the last fifteen or twenty years as text-books for medical students, this is the only one that even approximates to the fulfilment of the peculiar wants of young men just entering upon the study of this branch of the profession.—*Western Jour. of Med. and Surgery.*

Its value is greatly enhanced by a very copious well-arranged index. We regard this as one of the most valuable contributions to modern surgery. To one entering his novitiate of practice, we regard it the most serviceable guide which he can consult. He will find a fulness of detail leading him through every step of the operation, and not deserting him until the final issue of the case is decided. For the same reason we recommend it to those whose routine of practice lies in such parts of the country that they must rarely encounter cases requiring surgical management.—*Stethoscope.*

Embracing, as will be perceived, the whole surgical domain, and each division of itself almost complete and perfect, each chapter full and explicit, each subject faithfully exhibited, we can only express our estimate of it in the aggregate. We consider it an excellent contribution to surgery, as probably the best single volume now extant on the subject, and with great pleasure we add it to our text-books.—*Nashville Journal of Medicine and Surgery.*

Prof. Erichsen's work, for its size, has not been surpassed; his nine hundred and eight pages, profusely illustrated, are rich in physiological, pathological, and operative suggestions, doctrines, details, and processes; and will prove a reliable resource for information, both to physician and surgeon, in the hour of peril.—*N. O. Med. and Surg. Journal.*

We are acquainted with no other work wherein so much good sense, sound principle, and practical inferences, stamp every page.—*American Lancet.*

ELLIS (BENJAMIN), M. D.

THE MEDICAL FORMULARY: being a Collection of Prescriptions, derived from the writings and practice of many of the most eminent physicians of America and Europe. Together with the usual Dietetic Preparations and Antidotes for Poisons. To which is added an Appendix, on the Endermic use of Medicines, and on the use of Ether and Chloroform. The whole accompanied with a few brief Pharmaceutic and Medical Observations. Tenth edition, revised and much extended by ROBERT P. THOMAS, M. D., Professor of Materia Medica in the Philadelphia College of Pharmacy. In one neat octavo volume, extra cloth, of 296 pages. $1 75.

FOWNES (GEORGE), PH. D., &c.

ELEMENTARY CHEMISTRY; Theoretical and Practical. With numerous illustrations. Edited, with Additions, by ROBERT BRIDGES, M. D. In one large royal 12mo. volume, of over 550 pages, with 181 wood-cuts. In leather, $1 50; extra cloth, $1 35.

We know of no better text-book, especially in the difficult department of organic chemistry, upon which it is particularly full and satisfactory. We would recommend it to preceptors as a capital "office book" for their students who are beginners in Chemistry. It is copiously illustrated with excellent wood-cuts, and altogether admirably "got up."—*N. J. Medical Reporter.*

A standard manual, which has long enjoyed the reputation of embodying much knowledge in a small space. The author has achieved the difficult task of condensation with masterly tact. His book is concise without being dry, and brief without being too dogmatical or general.—*Virginia Med. and Surgical Journal.*

The work of Dr. Fownes has long been before the public, and its merits have been fully appreciated as the best text-book on chemistry now in existence. We do not, of course, place it in a rank superior to the works of Brande, Graham, Turner, Gregory, or Gmelin, but we say that, as a work for students, it is preferable to any of them.—*London Journal of Medicine.*

A work well adapted to the wants of the student. It is an excellent exposition of the chief doctrines and facts of modern chemistry. The size of the work, and still more the condensed yet perspicuous style in which it is written, absolve it from the charges very properly urged against most manuals termed popular.—*Edinburgh Journal of Medical Science.*

FISKE FUND PRIZE ESSAYS.

THE EFFECTS OF CLIMATE ON TUBERCULOUS DISEASE. By EDWIN LEE, M. R. C. S., London, and **THE INFLUENCE OF PREGNANCY ON THE DEVELOPMENT OF TUBERCLES.** By EDWARD WARREN, M. D., of Edenton, N. C. Together in one neat octavo volume, extra cloth. $1 00. (*Just Ready.*)

FERGUSSON (WILLIAM), F. R. S.,
Professor of Surgery in King's College, London, &c.

A SYSTEM OF PRACTICAL SURGERY. Fourth American, from the third and enlarged London edition. In one large and beautifully printed octavo volume, of about 700 pages, with 393 handsome illustrations, leather. $3 00.

No work was ever written which more nearly comprehended the necessities of the student and

The addition of many new pages makes this work more than ever indispensable to the student and prac-

FLINT (AUSTIN), M. D.,

Professor of the Theory and Practice of Medicine in the University of Louisville, &c.

(An Important New Work.)

PHYSICAL EXPLORATION AND DIAGNOSIS OF DISEASES AFFECTING THE RESPIRATORY ORGANS. In one large and handsome octavo volume, extra cloth, 636 pages. $3 00.

We can only state our general impression of the high value of this work, and cordially recommend it to all. We regard it, in point both of arrangement and of the marked ability of its treatment of the subjects, as destined to take the first rank in works of this class. So far as our information extends, it has at present no equal. To the practitioner, as well as the student, it will be invaluable in clearing up the diagnosis of doubtful cases, and in shedding light upon difficult phenomena.—*Buffalo Med. Journal.*

This is the most elaborate work devoted exclusively to the physical exploration of diseases of the lungs, with which we are acquainted in the English language.—*Boston Med. and Surg. Journal.*

A work of original observation of the highest merit. We recommend the treatise to every one who wishes to become a correct auscultator. Based to a very large extent upon cases numerically examined, it carries the evidence of careful study and discrimination upon every page. It does credit to the author, and, through him, to the profession in this country. It is, what we cannot call every book upon auscultation, a readable book.—*Am. Jour. Med. Sciences.*

NOW COMPLETE,

GRAHAM (THOMAS), F. R. S.,

THE ELEMENTS OF INORGANIC CHEMISTRY, including the Applications of the Science in the Arts. New and much enlarged edition, by HENRY WATTS and ROBERT BRIDGES, M. D. Complete in one large and handsome octavo volume, of over 800 very large pages, with two hundred and thirty-two wood-cuts, extra cloth. $4 00.

*** Part II., completing the work from p. 431 to end, with Index, Title Matter, &c., may be had separate, cloth backs and paper sides. Price $2 50.

The long delay which has intervened since the appearance of the first portion of this work, has rendered necessary an Appendix, embodying the numerous and important investigations and discoveries of the last few years in the subjects contained in Part I. This occupies a large portion of Part II., and will be found to present a complete abstract of the most recent researches in the general principles of the science, as well as all details necessary to bring the whole work thoroughly up to the present time in all departments of Inorganic Chemistry.

Gentlemen desirous of completing their copies of the work are requested to apply for Part II. without delay. It will be sent by mail, prepaid, on receipt of the amount, $2 50.

It is a very acceptable addition to the library of standard books of every chemical student. No reader of English works on this science can afford to be without this edition of Prof. Graham's Elements.—*Silliman's Journal*, March, 1858.

From Prof. J. L. Crawcour, New Orleans School of Medicine, May 9, 1858.

It is beyond all question the best systematic work on Chemistry in the English language, and I am gratified to find that an American edition at a moderate price has been issued, so as to place it within the means of students. It will be the only text-book I shall now recommend to my class.

From Prof. Wolcott Gibbs, N. Y. Free Academy, May 25, 1858.

The work is an admirable one in all respects, and its republication here cannot fail to exert a positive influence upon the progress of science in this country.

From Prof. E. N. Horsford. Harvard College, April 27, 1858.

It has, in its earlier and less perfect editions, been familiar to me, and the excellence of its plan and the clearness and completeness of its discussions, have long been my admiration.

GRIFFITH (ROBERT E.), M. D., &c.

A UNIVERSAL FORMULARY, containing the methods of Preparing and Administering Officinal and other Medicines. The whole adapted to Physicians and Pharmaceutists. SECOND EDITION, thoroughly revised, with numerous additions, by ROBERT P. THOMAS, M. D., Professor of Materia Medica in the Philadelphia College of Pharmacy. In one large and handsome octavo volume, extra cloth, of 650 pages, double columns. $3 00; or bound in sheep, $3 25.

It was a work requiring much perseverance, and when published was looked upon as by far the best work of its kind that had issued from the American press. Prof Thomas has certainly "improved," as well as added to this Formulary, and has rendered it additionally deserving of the confidence of pharmaceutists and physicians.—*Am. Journal of Pharmacy.*

We are happy to announce a new and improved edition of this, one of the most valuable and useful works that have emanated from an American pen. It would do credit to any country, and will be found of daily usefulness to practitioners of medicine; it is better adapted to their purposes than the dispensatories.—*Southern Med. and Surg. Journal.*

It is one of the most useful books a country practitioner can possibly have in his possession.—*Medical Chronicle.*

This is a work of six hundred and fifty one pages, embracing all on the subject of preparing and administering medicines that can be desired by the physician and pharmaceutist.—*Western Lancet.*

The amount of useful, every-day matter for a practicing physician, is really immense.—*Boston Med. and Surg. Journal.*

We predict a great sale for this work, and we especially recommend it to all *medical* teachers.—*Richmond Stethoscope.*

This edition of Dr. Griffith's work has been greatly improved by the revision and ample additions of Dr. Thomas, and is now, we believe, one of the most complete works of its kind in any language. The additions amount to about seventy pages, and no effort has been spared to include in them all the recent improvements which have been published in medical journals, and systematic treatises. A work of this kind appears to us indispensable to the physician, and there is none we can more cordially recommend.—*N. Y. Journal of Medicine.*

GLUGE (GOTTLIEB), M. D.,

Professor of Physiology and Pathological Anatomy in the University of Brussels, &c.

AN ATLAS OF PATHOLOGICAL HISTOLOGY. Translated, with Notes and Additions, by JOSEPH LEIDY, M. D., Professor of Anatomy in the University of Pennsylvania. In one volume, very large imperial quarto, extra cloth, with 320 figures, plain and colored,

GROSS (SAMUEL D.), M. D.,

Professor of Surgery in the Jefferson Medical College of Philadelphia, &c.

New Edition (Now Ready.)

ELEMENTS OF PATHOLOGICAL ANATOMY. Third edition, thoroughly revised and greatly improved. In one large and very handsome octavo volume, with about three hundred and fifty beautiful illustrations, of which a large number are from original drawings. Price in extra cloth, $4 75; leather, raised bands, $5 25.

The very rapid advances in the Science of Pathological Anatomy during the last few years have rendered essential a thorough modification of this work, with a view of making it a correct exponent of the present state of the subject. The very careful manner in which this task has been executed, and the amount of alteration which it has undergone, have enabled the author to say that "with the many changes and improvements now introduced, the work may be regarded almost as a new treatise," while the efforts of the author have been seconded as regards the mechanical execution of the volume, rendering it one of the handsomest productions of the American press. A very large number of new and beautiful original illustrations have been introduced, and the work, it is hoped, will fully maintain the reputation hitherto enjoyed by it of a complete and practical exposition of its difficult and important subject.

We most sincerely congratulate the author on the successful manner in which he has accomplished his proposed object. His book is most admirably calculated to fill up a blank which has long been felt to exist in this department of medical literature, and as such must become very widely circulated amongst all classes of the profession.—*Dublin Quarterly Journ. of Med. Science*, Nov. 1857.

We have been favorably impressed with the general manner in which Dr. Gross has executed his task of affording a comprehensive digest of the present state of the literature of Pathological Anatomy, and have much pleasure in recommending his work to our readers, as we believe one well deserving of diligent perusal and careful study.—*Montreal Med. Chron.*, Sept. 1857.

BY THE SAME AUTHOR.

A PRACTICAL TREATISE ON THE DISEASES, INJURIES, AND MALFORMATIONS OF THE URINARY BLADDER, THE PROSTATE GLAND, AND THE URETHRA. Second Edition, revised and much enlarged, with one hundred and eighty-four illustrations. In one large and very handsome octavo volume, of over nine hundred pages. In leather, raised bands, $5 25; extra cloth, $4 75.

A volume replete with truths and principles of the utmost value in the investigation of these diseases.—*American Medical Journal.*

On the appearance of the first edition of this work, the leading English medical review predicted that it would have a "permanent place in the literature of surgery worthy to rank with the best works of the present age." This prediction has been amply fulfilled. Dr. Gross's treatise has been found to supply completely the want which has been felt ever since the elevation of surgery to the rank of a science, of a good practical treatise on the diseases of the bladder and its accessory organs. Philosophical in its design, methodical in its arrangement, ample and sound in its practical details, it may in truth be said to leave scarcely anything to be desired on so important a subject, and with the additions and modifications resulting from future discoveries and improvements, it will probably remain one of the most valuable works on this subject so long as the science of medicine shall exist.—*Boston Med. and Surg. Journal.*

Whoever will peruse the vast amount of valuable practical information it contains, and which we have been unable even to notice, will, we think, agree with us, that there is no work in the English language which can make any just pretensions to be its equal.—*N. Y. Journal of Medicine.*

BY THE SAME AUTHOR.

A PRACTICAL TREATISE ON FOREIGN BODIES IN THE AIR-PASSAGES. In one handsome octavo volume, extra cloth, with illustrations. pp. 468. $2 75.

BY THE SAME AUTHOR. (*In press.*)

A SYSTEM OF SURGERY; Diagnostic, Pathological, Therapeutic, and Operative. With very numerous engravings on wood. In two large octavo volumes.

GIBSON (WILLIAM), M. D.,

Late Professor of Surgery in the University of Pennsylvania, &c.

INSTITUTES AND PRACTICE OF SURGERY; being Outlines of a Course of Lectures. Eighth edition, improved and altered. With thirty-four plates. In two handsome octavo volumes, containing about 1000 pages, leather, raised bands. $6 50.

GRAY (HENRY), F. R. S.,

Lecturer on Anatomy at St. George's Hospital, London, &c.

ANATOMY, DESCRIPTIVE AND SURGICAL. The Drawings by H. V. Carter, M. D., late Demonstrator on Anatomy at St. George's Hospital; the Dissections jointly by the Author and Dr. Carter. In one magnificent imperial octavo volume, with 363 large and elaborate engravings on wood. (*At press.*)

The author has endeavored in this work to cover a more extended range of subjects than is customary in the ordinary text-books, by giving not only the details necessary for the student, but also the application of those details in the practice of medicine and surgery, thus rendering it not only a guide for the learner, but an admirable work of reference for the active practitioner. The engravings form a special feature in the work, many of them being the size of nature, nearly all original, and having the names of the various parts printed on the body of the cut, in place of figures of reference with descriptions at the foot. They thus form a complete and splendid series, which will greatly assist the student in obtaining a clear idea of Anatomy, and will also serve to refresh the memory of those who may find in the exigencies of practice the necessity of recalling the details of the dissecting room.

GARDNER'S MEDICAL CHEMISTRY, for the use of Students and the Profession. In one royal 12mo. vol., ex. cloth, pp. 396, with illustrations. $1 00.

THE PRACTICE OF AUSCULTATION AND OTHER MODES OF PHYSICAL DIAGNOSIS, IN DISEASES OF THE LUNGS AND HEART. Second American, from the second London edition.

HUGHES' CLINICAL INTRODUCTION [illegible] 1 vol. royal 12mo. ex. cloth, pp. 284, $1 00

HOBLYN (RICHARD D.), M. D.

A DICTIONARY OF THE TERMS USED IN MEDICINE AND THE COLLATERAL SCIENCES. A new American edition. Revised, with numerous Additions, by ISAAC HAYS, M. D., editor of the "American Journal of the Medical Sciences." In one large royal 12mo. volume, leather, of over 500 double columned pages. $1 50.

If the frequency with which we have referred to this volume since its reception from the publisher, two or three weeks ago, be any criterion for the future, the binding will soon have to be renewed, even with careful handling. We find that Dr. Hays has done the profession great service by his careful and industrious labors. The Dictionary has thus become eminently suited to our medical brethren in this country. The additions by Dr. Hays are in brackets, and we believe there is not a single page but bears these insignia; in every instance which we have thus far noticed, the additions are really needed and exceedingly valuable. We heartily commend the work to all who wish to be *au courant* in medical terminology.—*Boston Med. and Surg. Journal.*

To both practitioner and student, we recommend this dictionary as being convenient in size, accurate in definition, and sufficiently full and complete for ordinary consultation.—*Charleston Med. Journ. and Review.*

Hoblyn has always been a favorite dictionary, and in its present enlarged and improved form will give greater satisfaction than ever. The American editor, Dr. Hays, has made many very valuable additions. —*N. J. Med. Reporter.*

To supply the want of the medical reader arising from this cause, we know of no dictionary better arranged and adapted than the one bearing the above title. It is not encumbered with the obsolete terms of a bygone age, but it contains all that are now in use; embracing every department of medical science down to the very latest date. The volume is of a convenient size to be used by the medical student, and yet large enough to make a respectable appearance in the library of a physician.—*Western Lancet.*

Hoblyn's Dictionary has long been a favorite with us. It is the best book of definitions we have, and ought always to be upon the student's table.—*Southern Med. and Surg. Journal.*

HUNTER (JOHN).

(See "Ricord," page 26, for Ricord's edition of Hunter on Venereal.)

HOLLAND (SIR HENRY), BART., M. D., F. R. S.,

Physician in Ordinary to the Queen of England, &c.

MEDICAL NOTES AND REFLECTIONS. From the third London edition. In one handsome octavo volume, extra cloth. $3 00.

HABERSHON (S. O.), M. D.,

Assistant Physician to and Lecturer on Materia Medica and Therapeutics at Guy's Hospital, &c.

PATHOLOGICAL AND PRACTICAL OBSERVATIONS ON DISEASES OF THE ALIMENTARY CANAL, ŒSOPHAGUS, STOMACH, CÆCUM, AND INTESTINES. With illustrations on wood. In one handsome octavo volume. (*Publishing in the Medical News and Library for* 1858 and 1859.)

HORNER (WILLIAM E.), M. D.,

Professor of Anatomy in the University of Pennsylvania.

SPECIAL ANATOMY AND HISTOLOGY. Eighth edition. Extensively revised and modified. In two large octavo volumes, extra cloth, of more than one thousand pages, handsomely printed, with over three hundred illustrations. $6 00.

BY THE SAME AUTHOR.

ANATOMICAL ATLAS. By Professors HORNER and SMITH. See Smith, page 28.

HAMILTON (FRANK H.), M. D.,

Professor of Surgery, in Buffalo Medical College, &c.

A COMPLETE TREATISE ON FRACTURES AND DISLOCATIONS. In one handsome octavo volume, with several hundred illustrations. (*Preparing.*)

JONES (T. WHARTON), F. R. S.,

Professor of Ophthalmic Medicine and Surgery in University College, London, &c.

THE PRINCIPLES AND PRACTICE OF OPHTHALMIC MEDICINE AND SURGERY. With one hundred and ten illustrations. Second American from the second and revised London edition, with additions by EDWARD HARTSHORNE, M. D., Surgeon to Wills' Hospital, &c. In one large, handsome royal 12mo. volume, extra cloth, of 500 pages. $1 50.

We are confident that the reader will find, on perusal, that the execution of the work amply fulfils the promise of the preface, and sustains, in every point, the already high reputation of the author as an ophthalmic surgeon as well as a physiologist and pathologist. The book is evidently the result of much labor and research, and has been written with the greatest care and attention; it possesses that best quality which a general work, like a system or manual can show, viz: the quality of having all the materials whencesoever derived, so thoroughly wrought up, and digested in the author's mind, as to come forth with the freshness and impressiveness of an original production. We entertain little doubt that this book will become what its author hoped it might become, a manual for daily reference and consultation by the student and the general practitioner. The work is marked by that correctness, clearness, and precision of style which distinguish all the productions of the learned author.—*British and For. Med. Review.*

JONES (C. HANDFIELD), F. R. S., & EDWARD H. SIEVEKING, M. D.,

Assistant Physicians and Lecturers in St. Mary's Hospital, London.

A MANUAL OF PATHOLOGICAL ANATOMY. First American Edition,

Revised. With three hundred and ninety-seven handsome wood engravings. In one large and beautiful octavo volume of nearly 750 pages, leather. $3 75.

As a concise text-book, containing, in a condensed form, a complete outline of what is known in the domain of Pathological Anatomy, it is perhaps the best work in the English language. Its great merit consists in its completeness and brevity, and in this respect it supplies a great desideratum in our literature. Heretofore the student of pathology was obliged to glean from a great number of monographs, and the field was so extensive that but few cultivated it with any degree of success. As a simple work of reference, therefore, it is of great value to the student of pathological anatomy, and should be in every physician's library.—*Western Lancet.*

In offering the above titled work to the public, the authors have not attempted to intrude new views on their professional brethren, but simply to lay before them, what has long been wanted, an outline of the present condition of pathological anatomy. In this they have been completely successful. The work is one of the best compilations which we have ever perused.—*Charleston Medical Journal and Review.*

We urge upon our readers and the profession generally the importance of informing themselves in regard to modern views of pathology, and recommend to them to procure the work before us as the best means of obtaining this information.—*Stethoscope.*

From the casual examination we have given we are inclined to regard it as a text-book, plain, rational, and intelligible, such a book as the practical man needs for daily reference. For this reason it will be likely to be largely useful, as it suits itself to those busy men who have little time for minute investigation, and prefer a summary to an elaborate treatise.—*Buffalo Medical Journal.*

KIRKES (WILLIAM SENHOUSE), M. D.,

Demonstrator of Morbid Anatomy at St. Bartholomew's Hospital, &c.

A MANUAL OF PHYSIOLOGY. A new American, from the third and

improved London edition. With two hundred illustrations. In one large and handsome royal 12mo. volume, leather. pp. 586. $2 00. (*Just Issued*, 1857.)

In again passing this work through his hands, the author has endeavored to render it a correct exposition of the present condition of the science, making such alterations and additions as have been dictated by further experience, or as the progress of investigation has rendered desirable. In every point of mechanical execution the publishers have sought to make it superior to former editions, and at the very low price at which it is offered, it will be found one of the handsomest and cheapest volumes before the profession.

In making these improvements, care has been exercised not unduly to increase its size, thus maintaining its distinctive characteristic of presenting within a moderate compass a clear and connected view of its subjects, sufficient for the wants of the student.

This is a new and very much improved edition of Dr. Kirkes' well-known Handbook of Physiology. Originally constructed on the basis of the admirable treatise of Muller, it has in successive editions developed itself into an almost original work, though no change has been made in the plan or arrangement. It combines conciseness with completeness, and is, therefore, admirably adapted for consultation by the busy practitioner.—*Dublin Quarterly Journal*, Feb. 1857.

Its excellence is in its compactness, its clearness, and its carefully cited authorities. It is the most convenient of text-books. These gentlemen, Messrs. Kirkes and Paget, have really an immense talent for silence, which is not so common or so cheap as prating people fancy. They have the gift of telling us what we want to know, without thinking it necessary to tell us all they know.—*Boston Med. and Surg. Journal*, May 14, 1857.

One of the very best handbooks of Physiology we possess—presenting just such an outline of the science, comprising an account of its leading facts and generally admitted principles, as the student requires during his attendance upon a course of lectures, or for reference whilst preparing for examination.—*Am. Medical Journal.*

We need only say, that, without entering into discussions of unsettled questions, it contains all the recent improvements in this department of medical science. For the student beginning this study, and the practitioner who has but leisure to refresh his memory, this book is invaluable, as it contains all that it is important to know, without special details, which are read with interest only by those who would make a specialty, or desire to possess a critical knowledge of the subject.—*Charleston Medical Journal.*

KNAPP'S TECHNOLOGY; or, Chemistry applied to the Arts and to Manufactures. Edited, with numerous Notes and Additions, by Dr. EDMUND RONALDS and Dr. THOMAS RICHARDSON. First American edition, with Notes and Additions, by Prof. WALTER R. JOHNSON. In two handsome octavo volumes, extra cloth, with about 500 wood-engravings. $6 00.

LUDLOW (J. L.), M. D.

A MANUAL OF EXAMINATIONS upon Anatomy, Physiology, Surgery,

Practice of Medicine, Obstetrics, Materia Medica, Chemistry, Pharmacy, and Therapeutics. To which is added a Medical Formulary. Designed for Students of Medicine throughout the United States. Third edition, thoroughly revised and greatly extended and enlarged. With three hundred and seventy illustrations. In one large and handsome royal 12mo. volume, leather, of over 800 closely printed pages (*Just Issued.*) $2 50.

The great popularity of this volume, and the numerous demands for it during the two years in which it has been out of print, have induced the author in its revision to spare no pains to render it a correct and accurate digest of the most recent condition of all the branches of medical science. In many respects it may, therefore, be regarded rather as a new book than a new edition, an entire section on Physiology having been added, as also one on Organic Chemistry, and many portions having been rewritten. A very complete series of illustrations has been introduced, and every care has been taken in the mechanical execution to render it a convenient and satisfactory book for study or reference.

The arrangement of the volume in the form of question and answer renders it especially suited for the office examination of students and for those preparing for graduation.

We know of no better companion for the student ... *crammed* into his head by the various professors to whom he is compelled to listen.—*Western Lancet.*

LEHMANN (C. G.)

PHYSIOLOGICAL CHEMISTRY. Translated from the second edition by GEORGE E. DAY, M. D., F. R. S., &c., edited by R. E. ROGERS, M. D., Professor of Chemistry in the Medical Department of the University of Pennsylvania, with illustrations selected from Funke's Atlas of Physiological Chemistry, and an Appendix of plates. Complete in two large and handsome octavo volumes, extra cloth, containing 1200 pages, with nearly two hundred illustrations. $6 00.

This great work, universally acknowledged as the most complete and authoritative exposition of the principles and details of Zoochemistry, in its passage through the press, has received from Professor Rogers such care as was necessary to present it in a correct and reliable form. To such a work additions were deemed superfluous, but several years having elapsed between the appearance in Germany of the first and last volume, the latter contained a supplement, embodying numerous corrections and additions resulting from the advance of the science. These have all been incorporated in the text in their appropriate places, while the subjects have been still further elucidated by the insertion of illustrations from the Atlas of Dr. Otto Funke. With the view of supplying the student with the means of convenient comparison, a large number of wood-cuts, from works on kindred subjects, have also been added in the form of an Appendix of Plates. The work is, therefore, presented as in every way worthy the attention of all who desire to be familiar with the modern facts and doctrines of Physiological Science.

The most important contribution as yet made to Physiological Chemistry.—*Am. Journal Med. Sciences*, Jan. 1856.

The present volumes belong to the small class of medical literature which comprises elaborate works of the highest order of merit.—*Montreal Med. Chronicle*, Jan. 1856.

The work of Lehmann stands unrivalled as the most comprehensive book of reference and information extant on every branch of the subject on which it treats.—*Edinburgh Monthly Journal of Medical Science.*

Already well known and appreciated by the scientific world, Professor Lehmann's great work requires no laudatory sentences, as, under a new garb, it is now presented to us. The little space at our command would ill suffice to set forth even a small portion of its excellences.—*Boston Med. and Surg. Journal*, Dec. 1855.

BY THE SAME AUTHOR. (*Just Issued.*)

MANUAL OF CHEMICAL PHYSIOLOGY. Translated from the German, with Notes and Additions, by J. CHESTON MORRIS, M. D., with an Introductory Essay on Vital Force, by SAMUEL JACKSON, M. D., Professor of the Institutes of Medicine in the University of Pennsylvania. With illustrations on wood. In one very handsome octavo volume, extra cloth, of 336 pages. $2 25.

From Prof. Jackson's Introductory Essay.

In adopting the handbook of Dr. Lehmann as a manual of Organic Chemistry for the use of the students of the University, and in recommending his original work of PHYSIOLOGICAL CHEMISTRY for their more mature studies, the high value of his researches, and the great weight of his authority in that important department of medical science are fully recognized.

LAWRENCE (W.), F. R. S., &c.

A TREATISE ON DISEASES OF THE EYE. A new edition, edited, with numerous additions, and 243 illustrations, by ISAAC HAYS, M. D., Surgeon to Will's Hospital, &c. In one very large and handsome octavo volume, of 950 pages, strongly bound in leather with raised bands. $5 00.

This admirable treatise—the safest guide and most comprehensive work of reference, which is within the reach of the profession.—*Stethoscope.*

This standard text-book on the department of which it treats, has not been superseded, by any or all of the numerous publications on the subject heretofore issued. Nor with the multiplied improvements of Dr. Hays, the American editor, is it at all likely that this great work will cease to merit the confidence and preference of students or practitioners. Its ample extent—nearly one thousand large octavo pages—has enabled both author and editor to do justice to all the details of this subject, and condense in this single volume the present state of our knowledge of the whole science in this department, whereby its practical value cannot be excelled.—*N. Y. Med. Gaz.*

LAYCOCK (THOMAS), M. D., F. R. S. E.,

Professor of Practical and Clinical Medicine in the University of Edinburgh, &c.

LECTURES ON THE PRINCIPLES AND METHODS OF MEDICAL OBSERVATION AND RESEARCH. For the Use of Advanced Students and Junior Practitioners. In one very neat royal 12mo. volume, extra cloth. Price $1 00.

LALLEMAND AND WILSON.

A PRACTICAL TREATISE ON THE CAUSES, SYMPTOMS, AND TREATMENT OF SPERMATORRHŒA. By M. LALLEMAND. Translated and edited by HENRY J. MCDOUGALL. Third American edition. To which is added —— ON DISEASES OF THE VESICULÆ SEMINALES; AND THEIR ASSOCIATED ORGANS. With special reference to the Morbid Secretions of the Prostatic and Urethral Mucous Membrane. By MARRIS WILSON, M. D. In one neat octavo volume, of about 400 pp., extra cloth. $2 00. (*Now Ready.*)

Although the views of M. Lallemand on Spermatorrhœa have unquestionably exercised a very great influence, and the treatment advocated by him has been very generally adopted, still, a number of years having elapsed since his work was given to the world, the publishers have thought that the value of the present edition would be enhanced by the addition of the little treatise of Dr. MARRIS WILSON. In it the causes of the different varieties of Spermatorrhœa are investigated with the aid of modern pathology, from which, combined with the most recent experience of the profession, the attempt is made to deduce a rational system of curative treatment. Whatever deficiencies may have been caused in the work of M. Lallemand by the progress of medical science, will, it is hoped, be in this manner supplied.

LA ROCHE (R.), M. D., &c.

YELLOW FEVER, considered in its Historical, Pathological, Etiological, and Therapeutical Relations. Including a Sketch of the Disease as it has occurred in Philadelphia from 1699 to 1854, with an examination of the connections between it and the fevers known under the same name in other parts of temperate as well as in tropical regions. In two large and handsome octavo volumes of nearly 1500 pages, extra cloth. $7 00.

From Professor S. H. Dickson, Charleston, S. C., September 18, 1855.

A monument of intelligent and well applied research, almost without example. It is, indeed, in itself, a large library, and is destined to constitute the special resort as a book of reference, in the subject of which it treats, to all future time.

We have not time at present, engaged as we are, by day and by night, in the work of combating this very disease, now prevailing in our city, to do more than give this cursory notice of what we consider as undoubtedly the most able and erudite medical publication our country has yet produced. But in view of the startling fact, that this, the most malignant and unmanageable disease of modern times, has for several years been prevailing in our country to a greater extent than ever before; that it is no longer confined to either large or small cities, but penetrates country villages, plantations, and farmhouses; that it is treated with scarcely better success now than thirty or forty years ago; that there is vast mischief done by ignorant pretenders to knowledge in regard to the disease, and in view of the probability that a majority of southern physicians will be called upon to treat the disease, we trust that this able and comprehensive treatise will be very generally read in the south.—*Memphis Med. Recorder.*

This is decidedly *the* great American medical work of the day—a full, complete, and systematic treatise, unequalled by any other upon the all-important subject of Yellow Fever. The laborious, indefatigable, and learned author has devoted to it many years of arduous research and careful study, and the result is such as will reflect the highest honor upon the author and our country.—*Southern Med. and Surg. Journal.*

The genius and scholarship of this great physician could not have been better employed than in the erection of this towering monument to his own fame, and to the glory of the medical literature of his own country. It is destined to remain the great authority upon the subject of Yellow Fever. The student and physician will find in these volumes a *résumé* of the sum total of the knowledge of the world upon the awful scourge which they so elaborately discuss. The style is so soft and so pure as to refresh and invigorate the mind while absorbing the thoughts of the gifted author, while the publishers have succeeded in bringing the externals into a most felicitous harmony with the inspiration that dwells within. Take it all in all, it is a book we have often dreamed of, but dreamed not that it would ever meet our waking eye as a tangible reality.—*Nashville Journal of Medicine.*

We deem it fortunate that the splendid work of Dr. La Roche should have been issued from the press at this particular time. The want of a reliable digest of all that is known in relation to this frightful malady has long been felt—a want very satisfactorily met in the work before us. We deem it but faint praise to say that Dr. La Roche has succeeded in presenting the profession with an able and complete monograph, one which will find its way into every well ordered library.—*Va. Stethoscope.*

BY THE SAME AUTHOR.

PNEUMONIA; its Supposed Connection, Pathological and Etiological, with Autumnal Fevers, including an Inquiry into the Existence and Morbid Agency of Malaria. In one handsome octavo volume, extra cloth, of 500 pages. $3 00.

MILLER (HENRY), M. D.,

Professor of Obstetrics and Diseases of Women and Children in the University of Louisville.

PRINCIPLES AND PRACTICE OF OBSTETRICS, &c.; including the Treatment of Chronic Inflammation of the Cervix and Body of the Uterus considered as a frequent cause of Abortion. With about one hundred illustrations on wood. In one very handsome octavo volume, of over 600 pages. (*Now Ready.*) $3 75.

The reputation of Dr. Miller as an obstetrician is too widely spread to require the attention of the profession to be specially called to a volume containing the experience of his long and extensive practice. The very favorable reception accorded to his "Treatise on Human Parturition," issued some years since, is an earnest that the present work will fulfil the author's intention of providing within a moderate compass a complete and trustworthy text-book for the student, and book of reference for the practitioner. Based to a certain extent upon the former work, but enlarged to more than double its size, and almost wholly rewritten, it presents, besides the matured experience of the author, the most recent views and investigations of modern obstetric writers, such as DUBOIS, CAZEAUX, SIMPSON, TYLER SMITH, &c., thus embodying the results not only of the American, but also of the Paris, the London, and the Edinburgh obstetric schools. The author's position for so many years as a teacher of his favorite branch, has given him a familiarity with the wants of students and a facility of conveying instruction, which cannot fail to render the volume eminently adapted to its purposes.

We congratulate the author that the task is done. We congratulate him that he has given to the medical public a work which will secure for him a high and permanent position among the standard authorities on the principles and practice of obstetrics. Congratulations are not less due to the medical profession of this country, on the acquisition of a treatise embodying the results of the studies, reflections, and experience of Prof. Miller. Few men, if any, in this country, are more competent than he to write on this department of medicine. Engaged for thirty-five years in an extended practice of obstetrics, for many years a teacher of this branch of instruction in one of the largest of our institutions, a diligent student as well as a careful observer, an original and independent thinker, wedded to no hobbies, ever ready to consider without prejudice new views, and to adopt innovations if they are really improvements; and withal a clear, agreeable writer, a practical treatise from his pen could not fail to possess great value. Returning to Prof. Miller's work we have only to add that we hope most sincerely it will be in the hands of every reading and thinking practitioner

In fact, this volume must take its place among the standard systematic treatises on obstetrics; a position to which its merits justly entitle it. The style is such that the descriptions are clear, and each subject is discussed and elucidated with due regard to its practical bearings, which cannot fail to make it acceptable and valuable to both students and practitioners. We cannot, however, close this brief notice without congratulating the author and the profession on the production of such an excellent treatise. The author is a western man of whom we feel proud, and we cannot but think that his book will find many readers and warm admirers wherever obstetrics is taught and studied as a science and an art.—*The Cincinnati Lancet and Observer*, Feb. 1858.

A most respectable and valuable addition to our home medical literature, and one reflecting credit alike on the author and the institution to which he is attached. The student will find in this work a most useful guide to his studies; the country practitioner, rusty in his reading, can obtain from its pages a fair resumè of the modern literature of the science; and we hope to see this American produc-

MEIGS (CHARLES D.), M. D.,

Professor of Obstetrics, &c. in the Jefferson Medical College, Philadelphia.

OBSTETRICS: THE SCIENCE AND THE ART. Third edition, revised

and improved. With one hundred and twenty-nine illustrations. In one beautifully printed octavo volume, leather, of seven hundred and fifty-two large pages. $3 75.

The rapid demand for another edition of this work is a sufficient expression of the favorable verdict of the profession. In thus preparing it a third time for the press, the author has endeavored to render it in every respect worthy of the favor which it has received. To accomplish this he has thoroughly revised it in every part. Some portions have been rewritten, others added, new illustrations have been in many instances substituted for such as were not deemed satisfactory, while, by an alteration in the typographical arrangement, the size of the work has not been increased, and the price remains unaltered. In its present improved form, it is, therefore, hoped that the work will continue to meet the wants of the American profession as a sound, practical, and extended System of Midwifery.

Though the work has received only five pages of enlargement, its chapters throughout wear the impress of careful revision. Expunging and rewriting, remodelling its sentences, with occasional new material, all evince a lively desire that it shall deserve to be regarded as improved in *manner* as well as *matter*. In the *matter*, every stroke of the pen has increased the value of the book, both in expungings and additions.—*Western Lancet*, Jan. 1857.

The best American work on Midwifery that is accessible to the student and practitioner.—*N. W. Med. and Surg. Journal*, Jan. 1857.

This is a standard work by a great American Obstetrician. It is the third and last edition, and, in the language of the preface, the author has "brought the subject up to the latest dates of real improvement in our art and Science."—*Nashville Journ. of Med. and Surg.*, May, 1857.

BY THE SAME AUTHOR. (*Lately Issued.*)

WOMAN: HER DISEASES AND THEIR REMEDIES. A Series of Lectures to his Class. Third and Improved edition. In one large and beautifully printed octavo volume, leather. pp. 672. $3 60.

The gratifying appreciation of his labors, as evinced by the exhaustion of two large impressions of this work within a few years, has not been lost upon the author, who has endeavored in every way to render it worthy of the favor with which it has been received. The opportunity thus afforded for a second revision has been improved, and the work is now presented as in every way superior to its predecessors, additions and alterations having been made whenever the advance of science has rendered them desirable. The typographical execution of the work will also be found to have undergone a similar improvement, and the work is now confidently presented as in every way worthy the position it has acquired as the standard American text-book on the Diseases of Females.

It contains a vast amount of practical knowledge, by one who has accurately observed and retained the experience of many years, and who tells the result in a free, familiar, and pleasant manner.—*Dublin Quarterly Journal.*

There is an off-hand fervor, a glow, and a warm-heartedness infecting the effort of Dr. Meigs, which is entirely captivating, and which absolutely hurries the reader through from beginning to end. Besides, the book teems with solid instruction, and it shows the very highest evidence of ability, viz., the clearness with which the information is presented. We know of no better test of one's understanding a subject than the evidence of the power of lucidly explaining it. The most elementary, as well as the obscurest subjects, under the pencil of Prof. Meigs, are isolated and made to stand out in such bold relief, as to produce distinct impressions upon the mind and memory of the reader.—*The Charleston Med. Journal.*

Professor Meigs has enlarged and amended this great work, for such it unquestionably is, having passed the ordeal of criticism at home and abroad, but been improved thereby; for in this new edition the author has introduced real improvements, and increased the value and utility of the book immeasurably. It presents so many novel, bright, and sparkling thoughts; such an exuberance of new ideas on almost every page, that we confess ourselves to have become enamored with the book and its author; and cannot withhold our congratulations from our Philadelphia confreres, that such a teacher is in their service.—*N. Y. Med. Gazette.*

BY THE SAME AUTHOR.

ON THE NATURE, SIGNS, AND TREATMENT OF CHILDBED FEVER. In a Series of Letters addressed to the Students of his Class. In one handsome octavo volume, extra cloth, of 365 pages. $2 50.

The instructive and interesting author of this work, whose previous labors in the department of medicine which he so sedulously cultivates, have placed his countrymen under deep and abiding obligations, again challenges their admiration in the fresh and vigorous, attractive and racy pages before us. It is a delectable book. * * * This treatise upon child-bed fevers will have an extensive sale, being destined, as it deserves, to find a place in the library of every practitioner who scorns to lag in the rear.—*Nashville Journal of Medicine and Surgery.*

This book will add more to his fame than either of those which bear his name. Indeed we doubt whether any material improvement will be made on the teachings of this volume for a century to come, since it is so eminently practical, and based on profound knowledge of the *science* and consummate skill in the *art* of healing, and ratified by an ample and extensive experience, such as few men have the industry or good fortune to acquire.—*N. Y. Med. Gazette.*

BY THE SAME AUTHOR; WITH COLORED PLATES.

A TREATISE ON ACUTE AND CHRONIC DISEASES OF THE NECK OF THE UTERUS. With numerous plates, drawn and colored from nature in the highest style of art. In one handsome octavo volume, extra cloth. $4 50.

MAYNE'S DISPENSATORY AND THERAPEUTICAL REMEMBRANCER. Comprising the entire lists of Materia Medica, with every Practical Formula contained in the three British Pharmacopœias. Edited, with the addition of the Formulæ of the U. S. Pharmacopœia, by R. E. Griffith, M. D. 1 12mo. vol. ex. cl., 300 pp. 75 c.

MALGAIGNE'S OPERATIVE SURGERY, based on Normal and Pathological Anatomy. Translated from the French by Frederick Brittan, A. B., M. D. With numerous illustrations on wood. In one handsome octavo volume, extra cloth, of nearly six hundred pages. $2 25.

MACLISE (JOSEPH), SURGEON.

SURGICAL ANATOMY. Forming one volume, very large imperial quarto. With sixty-eight large and splendid Plates, drawn in the best style and beautifully colored. Containing one hundred and ninety Figures, many of them the size of life. Together with copious and explanatory letter-press. Strongly and handsomely bound in extra cloth, being one of the cheapest and best executed Surgical works as yet issued in this country. $11 00.

*** The size of this work prevents its transmission through the post-office as a whole, but those who desire to have copies forwarded by mail, can receive them in five parts, done up in stout wrappers. Price $9 00.

One of the greatest artistic triumphs of the age in Surgical Anatomy.—*British American Medical Journal.*

Too much cannot be said in its praise; indeed, we have not language to do it justice.—*Ohio Medical and Surgical Journal.*

The most admirable surgical atlas we have seen. To the practitioner deprived of demonstrative dissections upon the human subject, it is an invaluable companion.—*N. J. Medical Reporter.*

The most accurately engraved and beautifully colored plates we have ever seen in an American book—one of the best and cheapest surgical works ever published.—*Buffalo Medical Journal.*

It is very rare that so elegantly printed, so well illustrated, and so useful a work, is offered at so moderate a price.—*Charleston Medical Journal.*

Its plates can boast a superiority which places them almost beyond the reach of competition.—*Medical Examiner.*

Every practitioner, we think, should have a work of this kind within reach.—*Southern Medical and Surgical Journal.*

No such lithographic illustrations of surgical regions have hitherto, we think, been given.—*Boston Medical and Surgical Journal.*

As a surgical anatomist, Mr. Maclise has probably no superior.—*British and Foreign Medico-Chirurgical Review.*

Of great value to the student engaged in dissecting, and to the surgeon at a distance from the means of keeping up his anatomical knowledge.—*Medical Times.*

A work which has no parallel in point of accuracy and cheapness in the English language.—*N. Y. Journal of Medicine.*

To all engaged in the study or practice of their profession, such a work is almost indispensable.—*Dublin Quarterly Medical Journal.*

Country practitioners will find these plates of immense value.—*N. Y. Medical Gazette.*

We are extremely gratified to announce to the profession the completion of this truly magnificent work, which, as a whole, certainly stands unrivalled, both for accuracy of drawing, beauty of coloring, and all the requisite explanations of the subject in hand.—*The New Orleans Medical and Surgical Journal.*

This is by far the ablest work on Surgical Anatomy that has come under our observation. We know of no other work that would justify a student, in any degree, for neglect of actual dissection. In those sudden emergencies that so often arise, and which require the instantaneous command of minute anatomical knowledge, a work of this kind keeps the details of the dissecting-room perpetually fresh in the memory.—*The Western Journal of Medicine and Surgery.*

☞ The very low price at which this work is furnished, and the beauty of its execution, require an extended sale to compensate the publishers for the heavy expenses incurred.

MORLAND (W. W.), M. D.

Fellow of the Massachusetts Medical Society, &c.

DISEASES OF THE URINARY ORGANS; a Compendium of their Diagnosis, Pathology, and Treatment. With illustrations. In one large and handsome octavo volume, of about 600 pages, extra cloth. (*Now ready*, Oct. 1858.) Price $3 50.

This volume, it is hoped, will supply the want of a work presenting within convenient compass the whole subject of the diseases to which all the urinary organs are liable, with their treatment, both medical and surgical. The aim of the author has been throughout to condense the results of the most recent investigations in a clear and succinct manner, omitting nothing of practical importance, without, at the same time, embarrassing the student with unnecessary speculations. Various elaborate and important works have recently appeared on different departments of the subject, but none, it is believed, which thoroughly covers the whole ground in the manner which Dr. Morland has attempted.

MACKENZIE (W.), M. D.,

Surgeon Oculist in Scotland in ordinary to Her Majesty, &c. &c.

A PRACTICAL TREATISE ON DISEASES AND INJURIES OF THE EYE. To which is prefixed an Anatomical Introduction explanatory of a Horizontal Section of the Human Eyeball, by THOMAS WHARTON JONES, F. R. S. From the Fourth Revised and Enlarged London Edition. With Notes and Additions by ADDINELL HEWSON, M. D., Surgeon to Wills Hospital, &c. &c. In one very large and handsome octavo volume, leather, raised bands, with plates and numerous wood-cuts. $5 25.

The treatise of Dr. Mackenzie indisputably holds the first place, and forms, in respect of learning and research, an Encyclopædia unequalled in extent by any other work of the kind, either English or foreign. —*Dixon on Diseases of the Eye.*

Few modern books on any department of medicine or surgery have met with such extended circulation, or have procured for their authors a like amount of European celebrity. The immense research which it displayed, the thorough acquaintance with the subject, practically as well as theoretically, and the able manner in which the author's stores of learning and experience were rendered available for general use, at once procured for the first edition, as well on the continent as in this country, that high position as a standard work which each successive edition has more firmly established, in spite of the attractions of several rivals of no mean ability. We consider it the duty of every one who has the love of his profession and the welfare of his patient at heart, to make himself familiar with this the most complete work in the English language upon the diseases of the eye.—*Med. Times and Gazette.*

The fourth edition of this standard work will no doubt be as fully appreciated as the three former editions. It is unnecessary to say a word in its praise, for the verdict has already been passed upon it by the most competent judges, and "Mackenzie on the Eye" has justly obtained a reputation which it is no figure of speech to call world-wide.—*British and Foreign Medico-Chirurgical Review.*

This new edition of Dr. Mackenzie's celebrated treatise on diseases of the eye, is truly a miracle of industry and learning. We need scarcely say that he has entirely exhausted the subject of his specialty. —*Dublin Quarterly Journal.*

MILLER (JAMES), F. R. S. E.,

Professor of Surgery in the University of Edinburgh, &c.

PRINCIPLES OF SURGERY. Fourth American, from the third and revised Edinburgh edition. In one large and very beautiful volume, leather, of 700 pages, with two hundred and forty exquisite illustrations on wood. $3 75.

The work of Mr. Miller is too well and too favorably known among us, as one of our best text-books, to render any further notice of it necessary than the announcement of a new edition, the *fourth* in our country, a proof of its extensive circulation among us. As a concise and reliable exposition of the science of modern surgery, it stands deservedly high—we know not its superior.—*Boston Med. and Surg. Journal.*

It presents the most satisfactory exposition of the modern doctrines of the principles of surgery to be found in any volume in any language.—*N. Y. Journal of Medicine.*

The work takes rank with Watson's Practice of Physic; it certainly does not fall behind that great work in soundness of principle or depth of reasoning and research. No physician who values his reputation, or seeks the interests of his clients, can acquit himself before his God and the world without making himself familiar with the sound and philosophical views developed in the foregoing book.—*New Orleans Med. and Surg. Journal.*

Without doubt the ablest exposition of the principles of that branch of the healing art in any language. This opinion, deliberately formed after a careful study of the first edition, we have had no cause to change on examining the second. This edition has undergone thorough revision by the author; many expressions have been modified, and a mass of new matter introduced. The book is got up in the finest style, and is an evidence of the progress of typography in our country.—*Charleston Medical Journal and Review.*

BY THE SAME AUTHOR. (*Now Ready.*)

THE PRACTICE OF SURGERY. Fourth American from the last Edinburgh edition. Revised by the American editor. Illustrated by three hundred and sixty-four engravings on wood. In one large octavo volume, leather, of nearly 700 pages. $3 75.

No encomium of ours could add to the popularity of Miller's Surgery. Its reputation in this country is unsurpassed by that of any other work, and, when taken in connection with the author's *Principles of Surgery*, constitutes a whole, without reference to to which no conscientious surgeon would be willing practice his art.—*Southern Med. and Surg. Journal.*

It is seldom that two volumes have ever made so profound an impression in so short a time as the "Principles" and the "Practice" of Surgery by Mr. Miller—or so richly merited the reputation they have acquired. The author is an eminently sensible, practical, and well-informed man, who knows exactly what he is talking about and exactly how to talk it.—*Kentucky Medical Recorder.*

By the almost unanimous voice of the profession, his works, both on the principles and practice of surgery have been assigned the highest rank. If we were limited to but one work on surgery, that one should be Miller's, as we regard it as superior to all others.—*St. Louis Med. and Surg. Journal.*

The author has in this and his "Principles," presented to the profession one of the most complete and reliable systems of Surgery extant. His style of writing is original, impressive, and engaging, energetic, concise, and lucid. Few have the faculty of condensing so much in small space, and at the same time so persistently holding the attention. Whether as a text-book for students or a book of reference for practitioners, it cannot be too strongly recommended.—*Southern Journal of Med. and Physical Sciences.*

MONTGOMERY (W. F.), M. D., M. R. I. A., &c.,

Professor of Midwifery in the King and Queen's College of Physicians in Ireland, &c.

AN EXPOSITION OF THE SIGNS AND SYMPTOMS OF PREGNANCY.

With some other Papers on Subjects connected with Midwifery. From the second and enlarged English edition. With two exquisite colored plates, and numerous wood-cuts. In one very handsome octavo volume, extra cloth, of nearly 600 pages. (*Just Issued*, 1857.) $3 75.

The present edition of this classical volume is fairly entitled to be regarded as a new work, every sentence having been carefully rewritten, and the whole increased to more than double the original size. The title of the work scarcely does justice to the extent and importance of the topics brought under consideration, embracing, with the exception of the operative procedures of midwifery, almost everything connected with obstetries, either directly or incidentally; and there are few physicians who will not find in its pages much that will prove of great interest and value in their daily practice. The special Essays on the Period of Human Gestation, the Signs of Delivery, and the Spontaneous Amputation and other Lesions of the Fœtus in Utero present topics of the highest interest fully treated and beautifully illustrated.

In every point of mechanical execution the work will be found one of the handsomest yet issued from the American press.

A book unusually rich in practical suggestions.—*Am. Journal Med. Sciences*, Jan. 1857.

These several subjects so interesting in themselves, and so important, every one of them, to the most delicate and precious of social relations, controlling often the honor and domestic peace of a family, the legitimacy of offspring, or the life of its parent, are all treated with an elegance of diction, fulness of illustrations, acuteness and justice of reasoning, unparalleled in obstetrics, and unsurpassed in medicine. The reader's interest can never flag, so fresh, and vigorous, and classical is our author's style; and one forgets, in the renewed charm of every page, that it, and every line, and every word has been weighed and reweighed through years of preparation; that this is of all others the book of Obstetric Law, on each of its several topics; on all points connected with pregnancy, to be everywhere received as a manual of special jurisprudence, at once announcing fact, affording argument, establishing precedent, and governing alike the juryman, advocate, and judge. It is not merely in its legal relations that we find this work so interesting. Hardly a page but that has its hints or facts important to the general practitioner; and not a chapter without especial matter for the anatomist, physiologist, or pathologist.—*N. A. Med.-Chir. Review*, March, 1857.

MOHR (FRANCIS), PH. D., AND REDWOOD (THEOPHILUS).

PRACTICAL PHARMACY. Comprising the Arrangements, Apparatus, and Manipulations of the Pharmaceutical Shop and Laboratory. Edited, with extensive Additions, by Prof. WILLIAM PROCTER, of the Philadelphia College of Pharmacy. In one handsomely printed octavo volume, extra cloth, of 570 pages, with over 500 engravings on wood. $2 75.

NEILL (JOHN), M. D.,

Surgeon to the Pennsylvania Hospital, &c.; and

FRANCIS GURNEY SMITH, M. D.,

Professor of Institutes of Medicine in the Pennsylvania Medical College.

AN ANALYTICAL COMPENDIUM OF THE VARIOUS BRANCHES OF MEDICAL SCIENCE; for the Use and Examination of Students. A new edition, revised and improved. In one very large and handsomely printed royal 12mo. volume, of about one thousand pages, with 374 wood-cuts. Strongly bound in leather, with raised bands. $3 00.

The very flattering reception which has been accorded to this work, and the high estimate placed upon it by the profession, as evinced by the constant and increasing demand which has rapidly exhausted two large editions, have stimulated the authors to render the volume in its present revision more worthy of the success which has attended it. It has accordingly been thoroughly examined, and such errors as had on former occasions escaped observation have been corrected, and whatever additions were necessary to maintain it on a level with the advance of science have been introduced. The extended series of illustrations has been still further increased and much improved, while, by a slight enlargement of the page, these various additions have been incorporated without increasing the bulk of the volume.

The work is, therefore, again presented as eminently worthy of the favor with which it has hitherto been received. As a book for daily reference by the student requiring a guide to his more elaborate text-books, as a manual for preceptors desiring to stimulate their students by frequent and accurate examination, or as a source from which the practitioners of older date may easily and cheaply acquire a knowledge of the changes and improvement in professional science, its reputation is permanently established.

The best work of the kind with which we are acquainted.—*Med. Examiner.*

Having made free use of this volume in our examinations of pupils, we can speak from experience in recommending it as an admirable compend for students, and as especially useful to preceptors who examine their pupils. It will save the teacher much labor by enabling him readily to recall all of the points upon which his pupils should be examined. A work of this sort should be in the hands of every one who takes pupils into his office with a view of examining them; and this is unquestionably the best of its class.—*Transylvania Med. Journal.*

In the rapid course of lectures, where work for the students is heavy, and review necessary for an examination, a compend is not only valuable, but it is almost a *sine qua non*. The one before us is, in most of the divisions, the most unexceptionable of all books of the kind that we know of. The newest and soundest doctrines and the latest improvements and discoveries are explicitly, though concisely, laid before the student. There is a class to whom we very sincerely commend this cheap book as worth its weight in silver—that class is the graduates in medicine of more than ten years' standing, who have not studied medicine since. They will perhaps find out from it that the science is not exactly now what it was when they left it off.—*The Stethoscope.*

NEILL (JOHN), M. D.,

Professor of Surgery in the Pennsylvania Medical College, &c.

OUTLINES OF THE VEINS AND LYMPHATICS. With handsome colored plates. 1 vol., cloth. $1 25.

OUTLINES OF THE NERVES. With handsome plates. 1 vol., cloth. $1 25.

NELIGAN (J. MOORE), M. D., M. R. I. A., &c.

(A splendid work. Just Issued.)

ATLAS OF CUTANEOUS DISEASES. In one beautiful quarto volume, extra cloth, with splendid colored plates, presenting nearly one hundred elaborate representations of disease. $4 50.

This beautiful volume is intended as a complete and accurate representation of all the varieties of Diseases of the Skin. While it can be consulted in conjunction with any work on Practice, it has especial reference to the author's "Treatise on Diseases of the Skin," so favorably received by the profession some years since. The publishers feel justified in saying that few more beautifully executed plates have ever been presented to the profession of this country.

A compend which will very much aid the practitioner in this difficult branch of diagnosis. Taken with the beautiful plates of the Atlas, which are remarkable for their accuracy and beauty of coloring, it constitutes a very valuable addition to the library of a practical man.—*Buffalo Med. Journal*, Sept. 1856.

Nothing is often more difficult than the diagnosis of disease of the skin; and hitherto, the only works containing illustrations have been at rather inconvenient prices—prices, indeed, that prevented general use. The work before us will supply a want long felt, and minister to a more perfect acquaintance with the nature and treatment of a very frequent and troublesome form of disease.—*Ohio Med. and Surg. Journal*, July, 1856.

Neligan's Atlas of Cutaneous Diseases supplies a long existent desideratum much felt by the largest class of our profession. It presents, in quarto size, 16 plates, each containing from 3 to 6 figures, and forming in all a total of 90 distinct representations of the different species of skin affections, grouped together in genera or families. The illustrations have been taken from nature, and have been copied with such fidelity that they present a striking picture of life; in which the reduced scale aptly serves to give, at a *coup d'œil*, the remarkable peculiarities of each individual variety. And while thus the disease is rendered more definable, there is yet no loss of proportion incurred by the necessary concentration. Each figure is highly colored, and so truthful has the artist been that the most fastidious observer could not justly take exception to the correctness of the execution of the pictures under his scrutiny.—*Montreal Med. Chronicle.*

BY THE SAME AUTHOR.

A PRACTICAL TREATISE ON DISEASES OF THE SKIN. Second American edition. In one neat royal 12mo. volume, extra cloth, of 334 pages. $1 00.

☞ The two volumes will be sent by mail on receipt of *Five Dollars.*

OWEN ON THE DIFFERENT FORMS OF [illegible]

PEASLEE (E. R.), M. D.,

Professor of Physiology and General Pathology in the New York Medical College.

HUMAN HISTOLOGY, in its relations to Anatomy, Physiology, and Pathology;

for the use of Medical Students. With four hundred and thirty-four illustrations. In one handsome octavo volume, of over 600 pages. (*Now Ready*, 1858.) $3 75.

It embraces a library upon the topics discussed within itself, and is just what the teacher and learner need. Another advantage, by no means to be overlooked, everything of real value in the wide range which it embraces, is with great skill compressed into an octavo volume of but little more than six hundred pages. We have not only the whole subject of Histology, interesting in itself, ably and fully discussed, but what is of infinitely greater interest to the student, because of greater practical value, are its relations to Anatomy, Physiology, and Pathology, which are here fully and satisfactorily set forth. These great supporting branches of practical medicine are thus linked together, and while establishing and illustrating each other, are interwoven into a harmonious whole. We commend the work to students and physicians generally.—*Nashville Journ. of Med. and Surgery*, Dec. 1857.

It far surpasses our expectation. We never conceived the possibility of compressing so much valuable information into so compact a form. We will not consume space with commendations. We receive this contribution to physiological science, "Not with vain thanks, but with acceptance bounteous." We have already paid it the practical compliment of making abundant use of it in the preparation of our lectures, and also of recommending its further perusal most cordially to our alumni; a recommendation which we now extend to our readers.—*Memphis Med. Recorder*, Jan. 1858.

We would recommend it to the medical student and practitioner, as containing a summary of all that is known of the important subjects which it treats; of all that is contained in the great works of Simon and Lehmann, and the organic chemists in general. Master this one volume, we would say to the medical student and practitioner—master this book and you know all that is known of the great fundamental principles of medicine, and we have no hesitation in saying that it is an honor to the American medical profession that one of its members should have produced it.—*St. Louis Med. and Surg. Journal*, March, 1858.

PEREIRA (JONATHAN), M. D., F. R. S., AND L. S.

THE ELEMENTS OF MATERIA MEDICA AND THERAPEUTICS.

Third American edition, enlarged and improved by the author; including Notices of most of the Medicinal Substances in use in the civilized world, and forming an Encyclopædia of Materia Medica. Edited, with Additions, by JOSEPH CARSON, M. D., Professor of Materia Medica and Pharmacy in the University of Pennsylvania. In two very large octavo volumes of 2100 pages, on small type, with about 500 illustrations on stone and wood, strongly bound in leather, with raised bands. $9 00.

PARRISH (EDWARD),

Lecturer on Practical Pharmacy and Materia Medica in the Pennsylvania Academy of Medicine, &c.

AN INTRODUCTION TO PRACTICAL PHARMACY. Designed as a Text-Book for the Student, and as a Guide for the Physician and Pharmaceutist.

With many Formulæ and Prescriptions. In one handsome octavo volume, extra cloth, of 550 pages, with 243 Illustrations. $2 75.

A careful examination of this work enables us to speak of it in the highest terms, as being the best treatise on practical pharmacy with which we are acquainted, and an invaluable *vade-mecum*, not only to the apothecary and to those practitioners who are accustomed to prepare their own medicines, but to every medical man and medical student. Throughout the work are interspersed valuable tables, useful formulæ, and practical hints, and the whole is illustrated by a large number of excellent wood-engravings.—*Boston Med. and Surg. Journal.*

This is altogether one of the most useful books we have seen. It is just what we have long felt to be needed by apothecaries, students, and practitioners of medicine, most of whom in this country have to put up their own prescriptions. It bears, upon every page, the impress of practical knowledge, conveyed in a plain common sense manner, and adapted to the comprehension of all who may read it. No detail has been omitted, however trivial it may seem, although really important to the dispenser of medicine. —*Southern Med. and Surg. Journal.*

To both the country practitioner and the city apothecary this work of Mr. Parrish is a godsend. A careful study of its contents will give the young graduate a familiarity with the value and mode of administering his prescriptions, which will be of as much use to his patient as to himself.—*Va. Med. Journal.*

Mr. Parrish has rendered a very acceptable service to the practitioner and student, by furnishing this book, which contains the leading facts and principles of the science of Pharmacy, conveniently arranged for study, and with special reference to those features of the subject which possess an especial practical interest to the physician. It furnishes the student, at the commencement of his studies, with that information which is of the greatest importance in initiating him into the domain of Chemistry and Materia Medica; it familiarizes him with the compounding of drugs, and supplies those minutiæ which but few practitioners can impart. The junior practitioner will, also, find this volume replete with instruction. —*Charleston Med. Journal and Review*, Mar. 1856.

There is no useful information in the details of the apothecary's or country physician's office conducted according to science that is omitted. The young physician will find it an encyclopedia of indispensable medical knowledge, from the purchase of a spatula to the compounding of the most learned prescriptions. The work is by the ablest pharmaceutist in the United States, and must meet with an immense sale.—*Nashville Journal of Medicine*, April, 1856.

We are glad to receive this excellent work. It will supply a want long felt by the profession, and especially by the student of Pharmacy. A large majority of physicians are obliged to compound their own medicines, and to them a work of this kind is indispensable.—*N. O. Medical and Surgical Journal.*

PARKER (LANGSTON),

Surgeon to the Queen's Hospital, Birmingham.

THE MODERN TREATMENT OF SYPHILITIC DISEASES, BOTH PRIMARY AND SECONDARY;

comprising the Treatment of Constitutional and Confirmed Syphilis, by a safe and successful method. With numerous Cases, Formulæ, and Clinical Observations. From the Third and entirely rewritten London edition. In one neat octavo volume,

PIRRIE (WILLIAM), F. R. S. E.,

Professor of Surgery in the University of Aberdeen.

THE PRINCIPLES AND PRACTICE OF SURGERY. Edited by JOHN NEILL, M. D., Professor of Surgery in the Penna. Medical College, Surgeon to the Pennsylvania Hospital, &c. In one very handsome octavo volume, leather, of 780 pages, with 316 illustrations. $3 75.

We know of no other surgical work of a reasonable size, wherein there is so much theory and practice, or where subjects are more soundly or clearly taught.—*The Stethoscope.*

There is scarcely a disease of the bones or soft parts, fracture, or dislocation, that is not illustrated by accurate wood-engravings. Then, again, every instrument employed by the surgeon is thus represented. These engravings are not only correct, but really beautiful, showing the astonishing degree of perfection to which the art of wood-engraving has arrived. Prof. Pirrie, in the work before us, has elaborately discussed the principles of surgery, and a safe and effectual practice predicated upon them. Perhaps no work upon this subject heretofore issued is so full upon the science of the art of surgery.—*Nashville Journal of Medicine and Surgery.*

RICORD (P.), M. D.,

A TREATISE ON THE VENEREAL DISEASE. By JOHN HUNTER, F. R. S.

With copious Additions, by PH. RICORD, M. D. Translated and Edited, with Notes, by FREEMAN J. BUMSTEAD, M. D., Lecturer on Venereal at the College of Physicians and Surgeons, New York. Second edition, revised, containing a *résumé* of RICORD'S RECENT LECTURES ON CHANCRE. In one handsome octavo volume, extra cloth, of 550 pages, with eight plates. $3 25. (*Now Ready*, December, 1858.)

In revising this work, the editor has endeavored to introduce whatever matter of interest the recent investigations of syphilographers have added to our knowledge of the subject. The principal source from which this has been derived is the volume of "Lectures on Chancre," published a few months since by M. Ricord, which affords a large amount of new and instructive material on many controverted points. In the previous edition, M. Ricord's additions amounted to nearly one-third of the whole, and with the matter now introduced, the work may be considered to present his views and experience more thoroughly and completely than any other. The value of the original treatise of Mr. Hunter is too well known to require praise. Perhaps no medical work in the English language has so thoroughly stood the test of time, or has so completely assumed the position of a classic, and a volume like the present, containing the united labors of the highest authorities on so difficult and important a subject, becomes indispensable to all who desire to keep themselves on a level with the progress of medical science.

Every one will recognize the attractiveness and value which this work derives from thus presenting the opinions of these two masters side by side. But, it must be admitted, what has made the fortune of the book, is the fact that it contains the "most complete embodiment of the veritable doctrines of the Hôpital du Midi," which has ever been made public. The doctrinal ideas of M. Ricord, ideas which, if not universally adopted, are incontestably dominant, have heretofore only been interpreted by more or less skilful secretaries, sometimes accredited and sometimes not.

In the notes to Hunter, the master substitutes himself for his interpreters, and gives his original thoughts to the world in a lucid and perfectly intelligible manner. In conclusion we can say that this is incontestably the best treatise on syphilis with which we are acquainted, and, as we do not often employ the phrase, we may be excused for expressing the hope that it may find a place in the library of every physician.—*Virginia Med. and Surg. Journal.*

BY THE SAME AUTHOR.

RICORD'S LETTERS ON SYPHILIS. Translated by W. P. LATTIMORE, M. D.

In one neat octavo volume, of 270 pages, extra cloth. $2 00.

ROKITANSKY (CARL), M. D.,

Curator of the Imperial Pathological Museum, and Professor at the University of Vienna, &c.

A MANUAL OF PATHOLOGICAL ANATOMY. Four volumes, octavo, bound in two, extra cloth, of about 1200 pages. Translated by W. E. SWAINE, EDWARD SIEVEKING, C. H. MOORE, and G. E. DAY. $5 50

The profession is too well acquainted with the reputation of Rokitansky's work to need our assurance that this is one of the most profound, thorough, and valuable books ever issued from the medical press. It is *sui generis*, and has no standard of comparison. It is only necessary to announce that it is issued in a form as cheap as is compatible with its size and preservation, and its sale follows as a matter of course. No library can be called complete without it.—*Buffalo Med. Journal.*

An attempt to give our readers any adequate idea of the vast amount of instruction accumulated in these volumes, would be feeble and hopeless. The effort of the distinguished author to concentrate in a small space his great fund of knowledge, has so charged his text with valuable truths, that any attempt of a reviewer to epitomize is at once paralyzed, and must end in a failure.—*Western Lancet.*

As this is the highest source of knowledge upon the important subject of which it treats, no real student can afford to be without it. The American publishers have entitled themselves to the thanks of the profession of their country, for this timeous and beautiful edition.—*Nashville Journal of Medicine.*

As a book of reference, therefore, this work must prove of inestimable value, and we cannot too highly recommend it to the profession.—*Charleston Med. Journal and Review.*

This book is a necessity to every practitioner.—*Am. Med. Monthly.*

RIGBY (EDWARD), M. D.,

Senior Physician to the General Lying-in Hospital, &c.

A SYSTEM OF MIDWIFERY. With Notes and Additional Illustrations.

Second American Edition. One volume octavo, extra cloth, 422 pages. $2 50.

BY THE SAME AUTHOR. (*Now Ready*, 1857.)

ON THE CONSTITUTIONAL TREATMENT OF FEMALE DISEASES.

In one neat royal 12mo. volume, extra cloth, of about 250 pages. $1 00.

ROYLE'S MATERIA MEDICA AND THERAPEUTICS; including the

RAMSBOTHAM (FRANCIS H.), M. D.

THE PRINCIPLES AND PRACTICE OF OBSTETRIC MEDICINE AND SURGERY, in reference to the Process of Parturition. A new and enlarged edition, thoroughly revised by the Author. With Additions by W. V. KEATING, M. D. In one large and handsome imperial octavo volume, of 650 pages, strongly bound in leather, with raised bands; with sixty-four beautiful Plates, and numerous Wood-cuts in the text, containing in all nearly two hundred large and beautiful figures. $5 00.

In calling the attention of the profession to the new edition of this standard work, the publishers would remark that no efforts have been spared to secure for it a continuance and extension of the remarkable favor with which it has been received. The last London issue, which was considerably enlarged, has received a further revision from the author, especially for this country. Its passage through the press here has been supervised by Dr. Keating, who has made numerous additions with a view of presenting more fully whatever was necessary to adapt it thoroughly to American modes of practice. In its mechanical execution, a like superiority over former editions will be found.

From Prof. Hodge, of the University of Pa.

To the American public, it is most valuable, from its intrinsic undoubted excellence, and as being the best authorized exponent of British Midwifery. Its circulation will, I trust, be extensive throughout our country.

The publishers have shown their appreciation of the merits of this work and secured its success by the truly elegant style in which they have brought it out, excelling themselves in its production, especially in its plates. It is dedicated to Prof. Meigs, and has the emphatic endorsement of Prof. Hodge, as the best exponent of British Midwifery. We know of no text-book which deserves in all respects to be more highly recommended to students, and we could wish to see it in the hands of every practitioner, for they will find it invaluable for reference.—*Med. Gazette.*

But once in a long time some brilliant genius rears his head above the horizon of science, and illuminates and purifies every department that he investigates; and his works become types, by which innumerable imitators model their feeble productions. Such a genius we find in the younger Ramsbotham, and such a type we find in the work now before us. The binding, paper, type, the engravings and wood-cuts are all so excellent as to make this book one of the finest specimens of the art of printing that have given such a world-wide reputation to its enterprising and liberal publishers. We welcome Ramsbotham's Principles and Practice of Obstetric Medicine and Surgery to our library, and confidently recommend it to our readers, with the assurance that it will not disappoint their most sanguine expectations.—*Western Lancet.*

It is unnecessary to say anything in regard to the utility of this work. It is already appreciated in our country for the value of the matter, the clearness of its style, and the fulness of its illustrations. To the physician's library it is indispensable, while to the student as a text-book, from which to extract the material for laying the foundation of an education on obstetrical science, it has no superior.—*Ohio Med. and Surg. Journal.*

We will only add that the student will learn from it all he need to know, and the practitioner will find it, as a book of reference, surpassed by none other.—*Stethoscope.*

The character and merits of Dr. Ramsbotham's work are so well known and thoroughly established, that comment is unnecessary and praise superfluous. The illustrations, which are numerous and accurate, are executed in the highest style of art. We cannot too highly recommend the work to our readers.—*St. Louis Med. and Surg. Journal.*

SCHOEDLER (FRIEDRICH), PH. D.,

Professor of the Natural Sciences at Worms, &c.

THE BOOK OF NATURE; an Elementary Introduction to the Sciences of Physics, Astronomy, Chemistry, Mineralogy, Geology, Botany, Zoology, and Physiology. First American edition, with a Glossary and other Additions and Improvements; from the second English edition. Translated from the sixth German edition, by HENRY MEDLOCK, F. C. S., &c. In one volume, small octavo, extra cloth, pp. 692, with 679 illustrations. $1 80.

SMITH (HENRY H.), M. D.,

Professor of Surgery in the University of Pennsylvania, &c.

MINOR SURGERY; or, Hints on the Every-day Duties of the Surgeon. Illustrated by two hundred and forty-seven illustrations. Third and enlarged edition. In one handsome royal 12mo. volume. pp. 456. In leather, $2 25; extra cloth, $2 00.

BY THE SAME AUTHOR, AND

HORNER (WILLIAM E.), M. D.,

Late Professor of Anatomy in the University of Pennsylvania.

AN ANATOMICAL ATLAS, illustrative of the Structure of the Human Body. In one volume, large imperial octavo, extra cloth, with about six hundred and fifty beautiful figures. $3 00.

These figures are well selected, and present a complete and accurate representation of that wonderful fabric, the human body. The plan of this Atlas, which renders it so peculiarly convenient for the student, and its superb artistical execution, have been already pointed out. We must congratulate the student upon the completion of this Atlas, as it is the most convenient work of the kind that has yet appeared; and we must add, the very beautiful manner in which it is "got up" is so creditable to the country as to be flattering to our national pride.—*American Medical Journal.*

SMITH (W. TYLER), M. D.,

Physician Accoucheur to St. Mary's Hospital, &c.

ON PARTURITION, AND THE PRINCIPLES AND PRACTICE OF OBSTETRICS. In one royal 12mo. volume, extra cloth, of 400 pages. $1 25.

BY THE SAME AUTHOR.

A PRACTICAL TREATISE ON THE PATHOLOGY AND TREATMENT OF LEUCORRHŒA. With numerous illustrations. In one very handsome octavo volume, extra cloth, of about 250 pages. $1 50.

SHARPEY (WILLIAM), M. D., JONES QUAIN, M. D., AND RICHARD QUAIN, F. R. S., &c.

HUMAN ANATOMY. Revised, with Notes and Additions, by JOSEPH LEIDY, M. D., Professor of Anatomy in the University of Pennsylvania.

Complete in two large octavo volumes, leather, of about thirteen hundred pages. Beautifully illustrated with over five hundred engravings on wood. $6 00.

We have no hesitation in recommending this treatise on anatomy as the most complete on that subject in the English language; and the only one, perhaps, in any language, which brings the state of knowledge forward to the most recent discoveries.—*The Edinburgh Med. and Surg. Journal.*

SARGENT (F. W.), M. D.

ON BANDAGING AND OTHER OPERATIONS OF MINOR SURGERY.

Second edition, enlarged. One handsome royal 12mo. vol., of nearly 400 pages, with 182 woodcuts. Extra cloth, $1 40; leather, $1 50.

Sargent's Minor Surgery has always been popular, and deservedly so. It furnishes that knowledge of the most frequently requisite performances of surgical art which cannot be entirely understood by attending clinical lectures. The art of bandaging, which is regularly taught in Europe, is very frequently overlooked by teachers in this country; the student and junior practitioner, therefore, may often require that knowledge which this little volume so tersely and happily supplies.—*Charleston Med. Journ. and Review*, March, 1856.

A work that has been so long and favorably known to the profession as Dr. Sargent's Minor Surgery, needs no commendation from us. We would remark, however, in this connection, that minor surgery seldom gets that attention in our schools that its importance deserves. Our larger works are also very defective in their teaching on these small practical points. This little book will supply the void which all must feel who have not studied its pages.—*Western Lancet*, March, 1856.

SKEY'S OPERATIVE SURGERY. In one very handsome octavo volume, extra cloth, of over 650 pages, with about one hundred wood-cuts. $3 25.

STANLEY'S TREATISE ON DISEASES OF THE BONES. In one volume, octavo, extra cloth, 286 pages. $1 50.

SOLLY ON THE HUMAN BRAIN; its Structure, Physiology, and Diseases. From the Second and much enlarged London edition. In one octavo volume, extra cloth, of 500 pages, with 120 wood-cuts. $2 00.

SIMON'S GENERAL PATHOLOGY, as conducive to the Establishment of Rational Principles for the prevention and Cure of Disease. In one neat octavo volume, extra cloth, of 212 pages. $1 25.

TANNER (T. H.), M. D.,

Physician to the Hospital for Women, &c.

A MANUAL OF CLINICAL MEDICINE AND PHYSICAL DIAGNOSIS.

To which is added The Code of Ethics of the American Medical Association. Second American Edition. In one neat volume, small 12mo., extra cloth, 87½ cents.

The work is an honor to its writer, and must obtain a wide circulation by its intrinsic merit alone. Suited alike to the wants of students and practitioners, it has only to be seen, to win for itself a place upon the shelves of every medical library.—*Boston Med and Surg. Journal.*

Now Complete.

TODD (ROBERT BENTLEY), M. D., F. R. S.,

Professor of Physiology in King's College, London; and

WILLIAM BOWMAN, F. R. S.,

Demonstrator of Anatomy in King's College, London.

THE PHYSIOLOGICAL ANATOMY AND PHYSIOLOGY OF MAN.

With about three hundred large and beautiful illustrations on wood. Complete in one large octavo volume, of 950 pages, leather. Price $4 50.

☞ Gentlemen who have received portions of this work, as published in the "MEDICAL NEWS AND LIBRARY," can now complete their copies, if immediate application be made. It will be furnished as follows, free by mail, in paper covers, with cloth backs.

PARTS I., II., III. (pp. 25 to 552), $2 50.
PART IV. (pp. 553 to end, with Title, Preface, Contents, &c.), $2 00.
Or, PART IV., SECTION II. (pp. 725 to end, with Title, Preface, Contents, &c.), $1 25.

A magnificent contribution to British medicine, and the American physician who shall fail to peruse it, will have failed to read one of the most instructive books of the nineteenth century.—*N. O. Med. and Surg. Journal*, Sept. 1857.

It is more concise than Carpenter's Principles, and more modern than the accessible edition of Müller's Elements; its details are brief, but sufficient; its descriptions vivid; its illustrations exact and copious; and its language terse and perspicuous.—*Charleston Med. Journal*, July, 1857.

We know of no work on the subject of physiology so well adapted to the wants of the medical student. Its completion has been thus long delayed, that the authors might secure accuracy by personal observation.—*St. Louis Med. and Surg. Journal*, Sept. '57.

One of the very best books ever issued from any medical press. We think it indispensable to every reading medical man, and it may, with all propriety, and with the utmost advantage be made a text-book by any student who would thoroughly comprehend the groundwork of medicine.—*N. O. Med. News*, June, 1857.

Our notice, though it conveys but a very feeble and imperfect idea of the magnitude and importance of the work now under consideration, already transcends our limits; and, with the indulgence of our readers, and the hope that they will peruse the book for themselves, as we feel we can with confidence recommend it, we leave it in their hands for them to judge of its merits.—*The Northwestern Med. and Surg. Journal*, Oct. 1857.

TODD (R. B.), M. D., F. R. S., &c.

CLINICAL LECTURES ON CERTAIN DISEASES OF THE URINARY ORGANS AND ON DROPSIES.

In one octavo volume. (*Just Issued*, 1857.) $1 50.

TAYLOR (ALFRED S.), M. D., F. R. S.,

Lecturer on Medical Jurisprudence and Chemistry in Guy's Hospital.

MEDICAL JURISPRUDENCE. Fourth American Edition. With Notes and References to American Decisions, by EDWARD HARTSHORNE, M. D. In one large octavo volume, leather, of over seven hundred pages. $3 00.

This standard work has lately received a very thorough revision at the hands of the author, who has introduced whatever was necessary to render it complete and satisfactory in carrying out the objects in view. The editor has likewise used every exertion to make it equally thorough with regard to all matters relating to the practice of this country. In doing this, he has carefully examined all that has appeared on the subject since the publication of the last edition, and has incorporated all the new information thus presented. The work has thus been considerably increased in size, notwithstanding which, it has been kept at its former very moderate price, and in every respect it will be found worthy of a continuance of the remarkable favor which has carried it through so many editions on both sides of the Atlantic. A few notices of the former editions are appended.

We know of no work on Medical Jurisprudence which contains in the same space anything like the same amount of valuable matter.—*N. Y. Journal of Medicine.*

No work upon the subject can be put into the hands of students either of law or medicine which will engage them more closely or profitably; and none could be offered to the busy practitioner of either calling, for the purpose of casual or hasty reference, that would be more likely to afford the aid desired. We therefore recommend it as the best and safest manual for daily use.—*American Journal of Medical Sciences.*

This work of Dr. Taylor's is generally acknowledged to be one of the ablest extant on the subject of medical jurisprudence. It is certainly one of the most attractive books that we have met with; supplying so much both to interest and instruct, that we do not hesitate to affirm that after having once commenced its perusal, few could be prevailed upon to desist before completing it. In the last London edition, all the newly observed and accurately recorded facts have been inserted, including much that is recent of Chemical, Microscopical, and Pathological research, besides papers on numerous subjects never before published.—*Charleston Medical Journal and Review.*

It is not excess of praise to say that the volume before us is the very best treatise extant on Medical Jurisprudence. In saying this, we do not wish to be understood as detracting from the merits of the excellent works of Beck, Ryan, Traill, Guy, and others; but in interest and value we think it must be conceded that Taylor is superior to anything that has preceded it.—*N. W. Medical and Surg. Journal.*

BY THE SAME AUTHOR. (*Nearly Ready.*)

ON POISONS, IN RELATION TO MEDICAL JURISPRUDENCE AND MEDICINE. Second American, from a second and revised London edition. In one large octavo volume.

The length of time which has elapsed since the first appearance of this work, has wrought so great a change in the subject, as to require a very thorough revision to adapt the volume to the present wants of the profession. The rapid advance of Chemistry has introduced into use many new substances which may become fatal through accident, carelessness, or design—while at the same time it has likewise designated new and more exact modes of counteracting or detecting those previously treated of. Mr. Taylor's position as the leading medical jurist of England, has during this period conferred on him extraordinary advantages in acquiring experience in all that relates to this department, nearly all cases of moment being referred to him for examination, as an expert whose testimony is generally accepted as final. The results of his labors, therefore, as gathered together in this volume, carefully weighed and sifted, and presented in the clear and intelligible style for which he is noted, may be received as an acknowledged authority, and as a guide to be followed with implicit confidence.

WILSON (MARRIS), M. D.

ON DISEASES OF THE VESICULÆ SEMINALES. See "LALLEMAND," page 19.

WILLIAMS (C. J. B.), M. D., F. R. S.,

Professor of Clinical Medicine in University College, London, &c.

PRINCIPLES OF MEDICINE. An Elementary View of the Causes, Nature, Treatment, Diagnosis, and Prognosis of Disease; with brief remarks on Hygienics, or the preservation of health. A new American, from the third and revised London edition. In one octavo volume, leather, of about 500 pages. $2 50. (*Just Issued.*)

The very recent and thorough revision which this work has enjoyed at the hands of the author has brought it so completely up to the present state of the subject that in reproducing it no additions have been found necessary. The success which the work has heretofore met shows that its importance has been appreciated, and in its present form it will be found eminently worthy a continuance of the same favor, possessing as it does the strongest claims to the attention of the medical student and practitioner, from the admirable manner in which the various inquiries in the different branches of pathology are investigated, combined and generalized by an experienced practical physician, and directly applied to the investigation and treatment of disease.

We find that the deeply-interesting matter and style of this book have so far fascinated us, that we have unconsciously hung upon its pages, not too long, indeed, for our own profit, but longer than reviewers can be permitted to indulge. We leave the further analysis to the student and practitioner. Our judgment of the work has already been sufficiently expressed. It is a judgment of almost unqualified praise. The work is not of a controversial, but of a didactic character; and as such we hail it, and recommend it for a text-book, guide, and constant companion to every practitioner and every student who wishes to extricate himself from the well-worn ruts of empiricism, and to base his practice of medicine upon principles.—*London Lancet.*

A text-book to which no other in our language is comparable.—*Charleston Medical Journal.*

No work has ever achieved or maintained a more deserved reputation.—*Va. Med. and Surg. Journal.*

WHITEHEAD ON THE CAUSES AND TREATMENT OF ABORTION AND STERILITY. Second American Edition. In one volume, octavo, extra cloth, pp. 308. $1 75.

New and much enlarged edition—(Now Ready, Oct. 1858.)

WATSON (THOMAS), M. D., &c.

Late Physician to the Middlesex Hospital, &c.

LECTURES ON THE PRINCIPLES AND PRACTICE OF PHYSIC.

Delivered at King's College, London. A new American, from the last revised and enlarged English edition, with Additions, by D. FRANCIS CONDIE, M. D., author of "A Practical Treatise on the Diseases of Children," &c. With one hundred and eighty-five illustrations on wood. In one very large and handsome volume, imperial octavo, of over 1200 closely printed pages in small type; the whole strongly bound in leather, with raised bands. Price $4 25.

The publishers feel that they are rendering a service to the American profession in presenting at so very moderate a price this vast body of sound practical information. Whether as a guide for the student entering on a course of instruction, or as a book of reference for daily consultation by the practitioner, "Watson's Practice" has long been regarded as second to none; the soundness and fulness of its teachings, the breadth and liberality of its views, and the easy and flowing style in which it is written having won for it the position of a general favorite. That this high reputation might be fully maintained, the author has subjected it to a thorough revision; every portion has been examined with the aid of the most recent researches in pathology, and the results of modern investigations in both theoretical and practical subjects have been carefully weighed and embodied throughout its pages. The watchful scrutiny of the editor has likewise introduced whatever possesses immediate importance to the American physician in relation to diseases incident to our climate which are little known in England, as well as those points in which experience here has led to different modes of practice; and he has also added largely to the series of illustrations, believing that in this manner valuable assistance may be conveyed to the student in elucidating the text. The work will, therefore, be found thoroughly on a level with the most advanced state of medical science on both sides of the Atlantic.

The additions which the work has received are shown by the fact that notwithstanding an enlargement in the size of the page, more than two hundred additional pages have been necessary to accommodate the two large volumes of the London edition (which sells at ten dollars), within the compass of a single volume, and in its present form it contains the matter of at least three ordinary octavos. Believing it to be a work which should lie on the table of every physician, and be in the hands of every student, the publishers have put it at a price within the reach of all, making it one of the cheapest books as yet presented to the American profession, while at the same time the beauty of its mechanical execution renders it an exceedingly attractive volume.

It would appear almost superfluous to adduce commendatory notices of a work which has so long been established in the position of a standard authority as "Watson's Practice." A few extracts are, however, subjoined from reviews of the new and improved edition.

The fourth edition now appears, so carefully revised, as to add considerably to the value of a book already acknowledged, wherever the English language is read, to be beyond all comparison the best systematic work on the Principles and Practice of Physic in the whole range of medical literature. Every lecture contains proof of the extreme anxiety of the author to keep pace with the advancing knowledge of the day, and to bring the results of the labors, not only of physicians, but of chemists and histologists, before his readers, wherever they can be turned to useful account. And this is done with such a cordial appreciation of the merit due to the industrious observer, such a generous desire to encourage younger and rising men, and such a candid acknowledgment of his own obligations to them, that one scarcely knows whether to admire most the pure, simple, forcible English—the vast amount of useful practical information condensed into the Lectures—or the manly, kind-hearted, unassuming character of the lecturer shining through his work. —*London Med. Times and Gazette*, Oct. 31, 1857.

Thus these admirable volumes come before the profession in their fourth edition, abounding in those distinguished attributes of moderation, judgment, erudite cultivation, clearness, and eloquence, with which they were from the first invested, but yet richer than before in the results of more prolonged observation, and in the able appreciation of the latest advances in pathology and medicine by one of the most profound medical thinkers of the day.—*London Lancet*, Nov. 14, 1857.

The lecturer's skill, his wisdom, his learning, are equalled by the ease of his graceful diction, his eloquence, and the far higher qualities of candor, of courtesy, of modesty, and of generous appreciation of merit in others. May he long remain to instruct us, and to enjoy, in the glorious sunset of his declining years, the honors, the confidence and love gained during his useful life.—*N. A. Med-Chir. Review*, July, 1858.

Watson's unrivalled, perhaps unapproachable work on Practice—the copious additions made to which (the fourth edition) have given it all the novelty and much of the interest of a new book.—*Charleston Med. Journal*, July, 1858.

Lecturers, practitioners, and students of medicine will equally hail the reappearance of the work of Dr. Watson in the form of a new—a fourth—edition. We merely do justice to our own feelings, and, we are sure, of the whole profession, if we thank him for having, in the trouble and turmoil of a large practice, made leisure to supply the hiatus caused by the exhaustion of the publisher's stock of the third edition, which has been severely felt for the last three years. For Dr. Watson has not merely caused the lectures to be reprinted, but scattered through the whole work we find additions or alterations which prove that the author has in every way sought to bring up his teaching to the level of the most recent acquisitions in science.—*Brit. and For. Medico-Chir. Review*, Jan. 1858.

WHAT TO OBSERVE

AT THE BEDSIDE AND AFTER DEATH, IN MEDICAL CASES.

Published under the authority of the London Society for Medical Observation. A new American, from the second and revised London edition. In one very handsome volume, royal 12mo., extra cloth. $1 00.

To the observer who prefers accuracy to blunders and precision to carelessness, this little book is invaluable.—*N. H. Journal of Medicine.*

One of the finest aids to a young practitioner we have ever seen.—*Peninsular Journal of Medicine.*

WILDE (W. R.),

Surgeon to St. Mark's Ophthalmic and Aural Hospital, Dublin.

AURAL SURGERY, AND THE NATURE AND TREATMENT OF DISEASES OF THE EAR.

In one handsome octavo volume, extra cloth, of 476 pages, with

New and much enlarged edition—(Now Ready, Oct. 1858.)

WILSON (ERASMUS), F. R. S.,

A SYSTEM OF HUMAN ANATOMY, General and Special.

A new and revised American, from the last and enlarged English Edition. Edited by W. H. GOBRECHT, M. D., Professor of Anatomy in the Philadelphia Medical College, &c. Illustrated with three hundred and ninety-seven engravings on wood. In one large and exquisitely printed octavo volume, of over 600 large pages; leather. $3 25.

The publishers trust that the well earned reputation so long enjoyed by this work will be more than maintained by the present edition. Besides a very thorough revision by the author, it has been most carefully examined by the editor, and the efforts of both have been directed to introducing everything which increased experience in its use has suggested as desirable to render it a complete text-book for those seeking to obtain or to renew an acquaintance with Human Anatomy. The amount of additions which it has thus received may be estimated from the fact that the present edition contains over one-fourth more matter than the last, rendering a smaller type and an enlarged page requisite to keep the volume within a convenient size. The author has not only thus added largely to the work, but he has also made alterations throughout, wherever there appeared the opportunity of improving the arrangement or style, so as to present every fact in its most appropriate manner, and to render the whole as clear and intelligible as possible. The editor has exercised the utmost caution to obtain entire accuracy in the text, and has largely increased the number of illustrations, of which there are about one hundred and fifty more in this edition than in the last, thus bringing distinctly before the eye of the student everything of interest or importance.

The publishers have felt that neither care nor expense should be spared to render the external finish of the volume worthy of the universal favor with which it has been received by the American profession, and they have endeavored consequently to produce in its mechanical execution an improvement corresponding with that which the text has enjoyed. It will therefore be found one of the handsomest specimens of typography as yet produced in this country, and in all respects suited to the office table of the practitioner, notwithstanding the exceedingly low price at which it has been placed.

A few notices of former editions are subjoined.

This is probably the prettiest medical book ever published, and we believe that its intrinsic merits are in keeping with its exterior advantages, having examined it sufficiently to satisfy us that it may be recommended to the student as no less distinguished by its accuracy and clearness of description than by its typographical elegance. The wood-cuts are exquisite.—*British and Foreign Medical Review.*

An elegant edition of one of the most useful and accurate systems of anatomical science which has been issued from the press. The illustrations are really beautiful. In its style the work is extremely concise and intelligible. No one can possibly take up this volume without being struck with the great beauty of its mechanical execution, and the clearness of the descriptions which it contains is equally evident. Let students, by all means examine the claims of this work on their notice, before they purchase a text-book of the vitally important science which this volume so fully and easily unfolds.—*Lancet.*

In every respect, this work, as an anatomical guide for the student who seeks to obtain knowledge which he has not yet acquired, and for the practitioner who wishes to keep up that which he finds gradually fading from his mind, merits our warmest and most decided praise.—*Med. Gazette.*

We regard it as the best system now extant for students.—*Western Lancet.*

It therefore receives our highest commendation.—*Southern Med. and Surg. Journal.*

BY THE SAME AUTHOR. (*Just Issued.*)

ON DISEASES OF THE SKIN.

Fourth and enlarged American, from the last and improved London edition. In one large octavo volume, of 650 pages, extra cloth, $2 75.

The writings of Wilson, upon diseases of the skin, are by far the most scientific and practical that have ever been presented to the medical world on this subject. The present edition is a great improvement on all its predecessors. To dwell upon all the great merits and high claims of the work before us, *seriatim*, would indeed be an agreeable service; it would be a mental homage which we could freely offer, but we should thus occupy an undue amount of space in this *Journal*. We will, however, look at some of the more salient points with which it abounds, and which make it incomparably superior in excellence to all other treatises on the subject of dermatology. No more speculative views are allowed a place in this volume, which, without a doubt, will, for a very long period, be acknowledged as the chief standard work on dermatology. The principles of an enlightened and rational therapeia are introduced on every appropriate occasion. The general practitioner and surgeon who, peradventure, may have for years regarded cutaneous maladies as scarcely worthy their attention, because, forsooth, they are not fatal in their tendency; or who, if they have attempted their cure, have followed the blind guidance of empiricism, will almost assuredly be roused to a new and becoming interest in this department of practice, through the inspiring agency of this book.—*Am. Jour. Med. Science*, Oct. 1857.

ALSO, NOW READY,

A SERIES OF PLATES ILLUSTRATING WILSON ON DISEASES OF THE SKIN;

consisting of nineteen beautifully executed plates, of which twelve are exquisitely colored, presenting the Normal Anatomy and Pathology of the Skin, and containing accurate representations of about one hundred varieties of disease, most of them the size of nature. Price in cloth $4 25.

In beauty of drawing and accuracy and finish of coloring these plates will be found equal to anything of the kind as yet issued in this country.

One of the best specimens of colored lithographic illustrations that have ever been published in this country. The representations of diseases of the skin, even to the most minute shade of coloring, are remarkably accurate, giving the student or practitioner a very correct idea of the disease he is studying. We know of no work so well adapted to the wants of the general practitioner as Wilson's, with the accompanying plates.—*Med. and Surg. Reporter*, May, 1858.

We have already expressed our high appreciation of Mr. Wilson's treatise on Diseases of the Skin. The plates are comprised in a separate volume, which we counsel all those who possess the text to purchase. It is a beautiful specimen of color printing, and the representations of the various forms of skin disease are as faithful as is possible in plates of the size.—*Boston Med. and Surg. Journal*, April 8, 1858.

WILSON (ERASMUS), M. D., F. R. S.

Lecturer on Anatomy, London.

THE DISSECTOR'S MANUAL; or, Practical and Surgical Anatomy. Third American, from the last revised and enlarged English edition. Modified and rearranged, by WILLIAM HUNT, M. D., Demonstrator of Anatomy in the University of Pennsylvania. In one large and handsome royal 12mo. volume, leather, of 582 pages, with 154 illustrations. $2 00.

The modifications and additions which this work has received in passing recently through the author's hands, is sufficiently indicated by the fact that it is enlarged by more than one hundred pages, notwithstanding that it is printed in smaller type, and with a greatly enlarged page.

BY THE SAME AUTHOR.

ON CONSTITUTIONAL AND HEREDITARY SYPHILIS, AND ON SYPHILITIC ERUPTIONS. In one small octavo volume, extra cloth, beautifully printed, with four exquisite colored plates, presenting more than thirty varieties of syphilitic eruptions. $2 25.

BY THE SAME AUTHOR.

HEALTHY SKIN; A Popular Treatise on the Skin and Hair, their Preservation and Management. Second American, from the fourth London edition. One neat volume, royal 12mo., extra cloth, of about 300 pages, with numerous illustrations. $1 00; paper cover, 75 cents.

(Now Complete.)

WEST (CHARLES), M. D.,

Accoucheur to and Lecturer on Midwifery at St. Bartholomew's Hospital, Physician to the Hospital for Sick Children, &c.

LECTURES ON THE DISEASES OF WOMEN. Now complete in one handsome octavo volume, extra cloth, of about 500 pages; price $2 50.

Also, for sale separate, PART II, being pp. 309 to end, with Index, Title matter, &c., 8vo., cloth, price $1.

☞ Copies done up in paper covers, for mailing, will be sent, free of postage, to any address within the United States on receipt of One Dollar in current funds or postage stamps. Subscribers to the "MEDICAL NEWS AND LIBRARY" who received the first portion of this work as published in 1856 and 1857, should lose no time in securing the completion.

Part I will no longer be sold separate.

As the first part of this work formed a complete treatise on the Diseases of the Uterus, so Part II is complete in itself as a text-book on the affections of the Uterine Appendages, the Ovaries, Vagina, Bladder, and External Organs. It will be found fully to maintain the high character acquired by the preceding portion immediately on its appearance, and the whole will constitute a reliable text-book on this interesting and difficult branch of practice.

A few notices of Part I are added.

As a writer, Dr. West stands, in our opinion, second only to Watson, the "Macaulay of Medicine;" he possesses that happy faculty of clothing instruction in easy garments; combining pleasure with profit, he leads his pupils, in spite of the ancient proverb, along a royal road to learning. His work is one which will not satisfy the extreme on either side, but it is one that will please the great majority who are seeking truth, and one that will convince the student that he has committed himself to a candid, safe, and valuable guide. We anticipate with pleasure the appearance of the second part of the work, which, if it equals this part, will complete one of our very best volumes upon diseases of females.—*N. A. Med.-Chirurg. Review*, July, 1858.

We must now conclude this hastily written sketch with the confident assurance to our readers that the work will well repay perusal. The conscientious, painstaking, practical physician is apparent on every page.—*N. Y. Journal of Medicine*, March, 1858.

We know of no treatise of the kind so complete and yet so compact.—*Chicago Med. Journal*, January, 1858.

A fairer, more honest, more earnest, and more reliable investigator of the many diseases of women and children is not to be found in any country.—*Southern Med. and Surg. Journal*, January 1858.

We gladly recommend his Lectures as in the highest degree instructive to all who are interested in obstetric practice.—*London Lancet.*

We have to say of it, briefly and decidedly, that it is the best work on the subject in any language; and that it stamps Dr. West as the *facile princeps* of British obstetric authors.—*Edinb. Med. Journ.*

BY THE SAME AUTHOR. (*Just Issued.*)

LECTURES ON THE DISEASES OF INFANCY AND CHILDHOOD. Second American, from the Second and Enlarged London edition. In one volume, octavo, extra cloth, of nearly five hundred pages. $2 00.

We take leave of Dr. West with great respect for his attainments, a due appreciation of his acute powers of observation, and a deep sense of obligation for this valuable contribution to our professional literature. His book is undoubtedly in many respects the best we possess on diseases of children. *Dublin Quarterly Journal of Medical Science.*

Dr. West has placed the profession under deep obligation by this able, thorough, and finished work upon a subject which almost daily taxes to the utmost the skill of the general practitioner. He has with singular felicity threaded his way through all the tortuous labyrinths of the difficult subject he has undertaken to elucidate, and has in many of the darkest corners left a light, which will never be extinguished.—*Nashville Medical Journal.*

BY THE SAME AUTHOR.

AN ENQUIRY INTO THE PATHOLOGICAL IMPORTANCE OF ULCERATION OF THE OS UTERI. In one neat octavo volume, extra cloth. $1 00.

YOUATT (WILLIAM), V. S.

THE DOG. Edited by E. J. LEWIS, M. D. With numerous and beautiful illustrations. In one very handsome volume, crown 8vo., crimson cloth, gilt, $1 25.